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INTRODUCTION TO THE SPECIAL ISSUE ON UPPER GREAT LAKES POLICY AND LAW

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I. WORDS MATTER

"Words count. Words matter and clever people know this," said Lana Pollack, chair of the United States Section of the International Joint Commission, to the crowd gathered in Duluth, Minnesota on a brisk day in March 2016.[2]

As a keynote speaker at the *Upper Great Lakes Law and Policy Symposium*, Pollack urged attendees to think of people ... people like herself who work in government ... as public servants, not bureaucrats. Talking about the Flint, Michigan water calamity and why it caught America's attention, she said, "It's because the vector for poisoning was water, not paint, and because those who fell down on the job were public servants. People have grown used to blaming government, rather than supporting it, seeing rules as burdensome rather than protective. A culture that has convinced itself that regulations are burdensome will quickly find itself without regulations and without protection."

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[1] Sharon Moen co-organized the *Upper Great Lakes Law and Policy* symposium and is the senior science communicator for Minnesota Sea Grant. The author thanks the organizations whose support, financial and other, made this conference, and therefore, this special issue of collected papers possible. Foremost is the National Sea Grant Law Center, which provided the core funding for this initiative. This was matched with support from Minnesota Sea Grant and the University of Minnesota Law School. I extend thanks to my co-organizers Dale Bergeron, maritime extension educator with Minnesota Sea Grant, and Brad Karkkainen, the Henry J. Fletcher Professor of Law at the University of Minnesota, as well as all of the members of the Symposium Steering Committee who helped in the development and organization of the symposium, which, in addition to myself, Dale, and Brad, included Catherine Janasie, Senior Research Counsel for the National Sea Grant Law Center; communication associate Jennifer Gasperini; Adam Reinhardt, pre-law student at the University of Minnesota Duluth; and Gretel Lee, law student at the University of Minnesota. Additional thanks goes to Joel Wessman of the Canadian Consulate General in Minneapolis for his cooperation in making the symposium a truly multinational project. Finally, I thank the presenters, members of the discussion panels and the authors of the papers who contributed to this special issue of the SEA GRANT LAW & POLICY JOURNAL along with journal editor Catherine Janasie and symposium moderator John A. Downing, director of Minnesota Sea Grant.

[2] Videos of most of the presentations delivered at the Upper Great Lakes Law and Policy Symposium can be accessed at: http://www.seagrant.umn.edu/news/managingwater#videos (last visited August 2, 2018).

Pollack was one of 17 compelling speakers at the symposium and not the only one to reference the weight of words. Michael (Mic) Isham, chairman of the Great Lakes Indian Fish and Wildlife Commission, recommended calling the Great Lakes "multinational" rather than "binational" resources, thereby acknowledging that their governance requires forums and policies that incorporate Native American and First Nation perspectives.

Brad Karkkainen, the Henry J. Fletcher Professor of Law at the University of Minnesota, suggested the lakes be called natural endowments, not commodities. "It is an interesting intellectual challenge to put a value to ecosystem services," he said. "But this accounting can only go so far. Putting a dollar value on these lakes almost trivializes them."

Karkkainen commended Great Lakes states and provinces for the policies and regulations that govern these boundary waters, and called for policy makers to step up even further to ensure the protection of the Great Lakes saying, "Be more ambitious and high-minded."

Each of the presentations at the *Upper Great Lakes Law and Policy Symposium*, which was co-hosted by Minnesota Sea Grant, the University of Minnesota Law School, and the National Sea Grant Law Center, was provocative. Supporting the claim that this was indeed an exceptional symposium, 100% of survey respondents (n=41) said that they would be eager to attend a similar conference. At the symposium, Isham said to a local Duluth reporter, "This is one of the best collaborations I've seen in my twenty-five years in environmental protection."[3]

II. WATER DIVERSIONS

The *Upper Great Lakes Law and Policy Symposium* happened at an interesting time in Great Lakes history. Noah Hall, Associate Professor of Law at Wayne State Law School, needed to recuse himself from presenting days before the symposium, having accepted an opportunity to represent one of the parties involved in a contentious debate over whether the City of Waukesha, Wisconsin, would win a permit to use Great Lakes water beyond the Great Lakes watershed.

[3] The footage containing this quote aired on the local FOX television station during the evening and late news on March 24, 2016.

It was the first test of the Great Lakes Compact[4] and many people attending the symposium were riveted by the process and passionate about the outcome. Keynote speaker Peter Annin, co-director of Northland College's Burke Center for Freshwater Innovation, explained that the compact limits the consumption of Great Lakes water to communities within the Great Lakes basin with one exception – communities in a county that straddles the lake's drainage basin can apply for a diversion. Since Waukesha is located in a county straddling the subcontinental divide between the Great Lakes and Mississippi River drainage basins, the city was eligible to apply for a diversion. The Great Lakes Compact was referenced multiple times at the symposium, particularly by Annin; Pollack; Karkkainen; Peter Johnson, Deputy Director of the Conference of Great Lakes and St. Lawrence Governors and Premiers; Cameron Davis, Senior Advisor to the Administrator, U.S. Environmental Protection Agency; and Michael Goffin, Regional Director General, Environment and Climate Change Canada.

About two months after the symposium, the eight Great Lakes states unanimously approved Waukesha's request for lake water.[5] The approval, absent legal challenges, means that Waukesha is poised to become the first United States community located entirely outside the Great Lakes drainage basin to receive a diversion of lake water under terms of the compact. This approval allows Waukesha to cease drawing water from radium-contaminated wells when it switches to pipelines and pumping stations connected to a Lake Michigan supply in 2023. The 2016 approval of Waukesha's request requires the city to return an equal amount of the water to the lake as fully treated wastewater. To do that, the city will build a separate wastewater pipeline to the Root River, a Lake Michigan tributary.

In addition to the Waukesha diversion, the Great Lakes Compact garnered additional public attention in 2017 when it was announced that Foxconn, a Taiwan-based electronics manufacturer, planned to construct a 20-million square foot complex in Mount Pleasant, Wisconsin, which would likely use millions of

[4] Great Lakes-St. Lawrence River Basin Water Resources Compact (2005), *available at* http://www.glslcompactcouncil.org/Docs/Agreements/Great%20Lakes-St%20Lawrence%20River%20Basin%20Water%20Resources%20Compact.pdf (last visited Aug. 28, 2018).

[5] Press Release, Mark Dayton, Governor of Minnesota, Statement from Governor Dayton on Waukesha Diversion Project (June 21, 2016), *available at* https://mn.gov/governor/newsroom/?id=1055-246479; *City of Waukesha Water Diversion*, Wis. Dept. of Natural Res., *available at* http://dnr.wi.gov/topic/EIA/waukeshadiversionapp.html (both sites last visited Aug. 28, 2018).

gallons of Lake Michigan water per day.[6] Under the Great Lakes Compact, utilities with access to the Great Lakes are allowed to pump a pre-determined amount of water from them each day. Some of this water is technically allowed outside of the basin as long as an equivalent volume is returned. Individual states have discretion as to how they enforce the Great Lakes Compact and locating the Foxconn factory in Mount Pleasant might be testing the limits of that discretion.[7]

III. RESILIENCE

Though Lake Ontario is classified as a lower Great Lake, its near record-high levels in 2017 and associated $45 million and more in government aid[8] illuminates two important points made at the symposium. The first is that the United States and Canada have very little control over Great Lakes water levels. Lauren Fry, Civil Engineer with the U.S. Army Corps of Engineers Detroit District (Corps) and symposium panelist, explained that the Corps and Environment Canada operate control structures at the instruction of the International Joint Commission. The outflow of Lake Superior is managed by the International Lake Superior Board of Control to balance the water levels of Lake Superior and the Michigan-Huron complex relative to their long-term averages.[9] The water from Lake Superior flows through a collection of structures that stretch across the St. Marys River, including three hydropower plants, five navigation locks, and a dam known as the Compensating Works. The International Lake Superior Board of Control, under the authority of the International Joint Commission, regulates the outflow from Lake Superior but that does not mean that full control of lake levels is possible. Precipitation, evaporation, and runoff can cause significant changes in the water levels of the Great Lakes, and these

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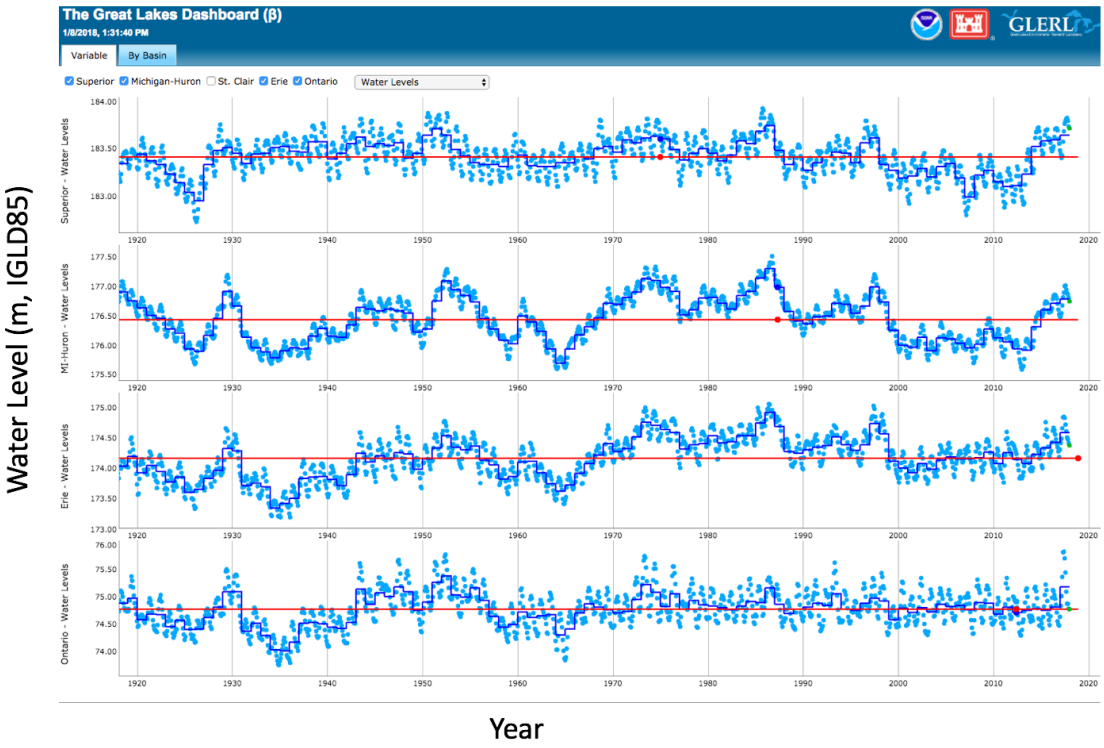
[6] *How Foxconn Could Affect the Great Lakes Compact*, WIS. PUB. RADIO, https://www.wpr.org/how-foxconn-could-affect-great-lakes-compact (last visited Aug. 28, 2018).
[7] Arthur Thomas, *Foxconn, Supplier Water Use Could Top Out at 12 Million Gallons Per Day*, BIZTIMES, www.biztimes.com/2018/ideas/government-politics/foxconn-supplier-water-use-could-top-out-at-12-million-gallons-per-day/ (last visited Aug. 28, 2018).
[8] Steve Orr, *Monroe, Cayuga are in the Money: FEMA Amends Shoreline Disaster Area*, DEMOCRAT AND CHRONICLE, www.democratandchronicle.com/story/news/2018/01/19/fema-amends-shoreline-disaster-area-include-monroe-and-cayuga-counties/1048909001/ (last visited Aug. 28, 2018).
[9] *Lake Superior Regulation Plan 2012*, INT'L LAKE SUPERIOR BD. OF CONTROL, http://ijc.org/en_/ilsbc/International_Lake_Superior_Board_of_Control (last visited Aug. 28, 2018).
[9] *Lake Superior Regulation Plan 2012*, INT'L LAKE SUPERIOR BD. OF CONTROL, http://ijc.org/en_/ilsbc/International_Lake_Superior_Board_of_Control (last visited Aug. 28, 2018).

variables are difficult to accurately predict. Figure 1 below shows changes in Great Lakes water levels from 1920-2017.

Figure 1: Graph of Great Lakes water levels from 1920 – 2017 generated through the NOAA GLERL Great Lakes Dashboard Project. Lake Ontario communities are still recovering from the high waters of 2017.



The second point is that people and coastal communities need to embrace the concept of resilience. The concept holds that floods and other disasters are unavoidable, and may well be more frequent and destructive in the future, so it is wise to rebuild and plan accordingly. A case-in-point occurred months after the symposium when a passing storm swamped a wide swath of Lake Superior's

south shore with up to fourteen inches of rain in just a few hours, creating floodwaters that killed three people and caused $26 million in damages.[10] Though not targeting water level fluctuations and extreme weather events per se, presentations during the symposium's panel on contaminants, climate, and emerging challenges dealt with the importance of planning for resilience in changing political, social, physical, and ecological systems. These presentations were delivered by Jason MacLean, Assistant Professor and Bora Laskin Faculty of Law; Wenona Singel, Associate Professor of law and Associate Director of the Indigenous Law and Policy Center; and Gretel Lee, a law student at the University of Minnesota Law School.

Lee cautioned that cumulative impact assessments are crucial. Singel lobbied for engaging and deploying multicultural and multidisciplinary expertise and for linking scientific analysis with deliberation. McLean said we need to move beyond episodic, reactive modes of public response to environmental challenges and create a sustained public interest and participation in policy. "So far," he said, "we've been making bad projects a little less bad. We need to move beyond that in our environmental impact assessments. What is our vision of sustainable development and how do we get more people to care and sustain their level of caring?"

IV. AQUATIC INVASIVE SPECIES

It would be difficult to hold a meeting about law and policy in the Great Lakes without talking about aquatic invasive species. *The Upper Great Lakes Law and Policy Symposium* included a panel of speakers on the subject, including pre-law student Adam Reinhardt's summary of why the Great Lakes Ballast Water Collaborative might serve as a model for addressing multinational Great Lakes challenges. Managing the ballast water of ships to control invasive species entering the Great Lakes has been the focus of environmental lawsuits and many policy debates in the United States. After Reinhardt, Craig Middlebrook, Deputy Administrator of the Saint Lawrence Seaway Development Corporation and co-

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[10] Danielle Kaeding, *Communities, Businesses Continue to Rebuild 1 Year After Northwestern Wisconsin Flooding,* WIS. PUB. RADIO, www.wpr.org/communities-businesses-continue-rebuild-1-year-after-northwestern-wisconsin-flooding (last visisted Aug. 28, 2018).

creator of the Great Lakes Ballast Water Collaborative, offered perspectives on policy decisions affecting commerce in the Great Lakes.

Mark Burrows, Physical Scientist and Project Manager for the International Joint Commission's Great Lakes Regional Office, talked about using science to inform invasive species policies. Marc Gaden, Communications Director and Legislative Liaison for the Great Lakes Fishery Commission focused on strategies to keep Invasive Carp from causing environmental and economic damage to the Great Lakes. "It's open season on Asian Carp," said Gaden. Both Gaden and Burrows suggested that pre-approval of tools to combat aquatic invasive species could speed up management responses.

V. CONCLUSION

Words matter, but so does will. Jon Allen, Director, Office of the Great Lakes, Michigan Department of Environmental Quality, spoke at the symposium saying that political and public will are essential. "Funding is solely and strictly a matter of will," he said. Burrows echoed that sentiment, saying, "You need good science but you also need the weight of evidence (practicality) and political will."

Karkkanin spoke of the Great Lakes Compact as representing a basin-wide commitment to keeping water in the Great Lakes to function as systems rather than viewing them as exportable commodities. "It's remarkable that this consensus exists," he said, remarking that a sense of place is the animating spirit giving rise to the Great Lakes Compact and its companion Agreement.

Davis and Goffin, representing the U.S. Environmental Protection Agency and Environment and Climate Change Canada, respectively, talked about next steps. Both of their presentations emphasized multinational cooperation, the importance of science-based decision-making and engaging the public. *The Upper Great Lakes Law and Policy Symposium* involved United States, Canadian, and tribal perspectives, and this diversity of perspectives and content begat deep discussions. Additionally, the symposium attracted delegates from the U.S. Department of State's International Visitor Leadership Program representing China, Israel, Mexico, Russia, Tanzania, and Vietnam. These international visitors attended to assess U.S. transboundary water management programs and discuss cooperative strategies to establish bilateral, regional, and global dialogues on shared water resources.

By examining ideas for tackling Great Lakes transboundary issues like aquatic invasive species, climate, contamination, and water diversions, *The Upper Great Lakes Law and Policy Symposium* created a forum for a reasoned exploration of how policies and laws might better reflect science and citizen engagement as they work toward sustainable solutions across jurisdictions.

TROUBLED WATERS: REINVIGORATING GREAT LAKES ENVIRONMENTAL GOVERNANCE THROUGH DELIBERATIVE DEMOCRACY

Jason MacLean[1]

Water – despite its theoretical abundance – is probably the biggest looming problem in Canada.[2]

I. INTRODUCTION: "A FAILURE OF GOVERNMENT"

While government officials deliberated internally over the purity of the drinking water in Flint, Michigan following the city's switch from the Detroit water system to the Flint River as its water supply, one official dismissed concerned citizen groups as "anti-everything."[3] Three months before receiving – and dismissing – a report prepared by a local pediatrician disclosing that an increasing number of Flint children were presenting elevated levels of lead in their blood, the Environmental Protection Agency – itself hardly blameless – cautioned state and federal officials that "[r]ecent drinking water sample results indicate the presence of high lead results in the drinking water, which is to be expected in a public water system that is not providing corrosion control treatment."[4] More than a year after the switch from the Detroit water system pending the completion of a new pipeline from Lake Huron, city officials failed to lower lead risks by simply adding chemicals to prevent aging pipes from corroding and leaching metals such as lead.[5] Meanwhile, the local government continued to ignore the concerns of local residents and publicly assure the purity of the water. "It's a quality, safe product," Flint Mayor Dayne Walling told *The*

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[1] Assistant Professor, University of Saskatchewan College of Law (jason.maclean@usask.ca). I am thankful for the helpful suggestions of this article's anonymous peer reviewers. Any remaining errors are my own.

[2] Dr. David Schindler (*quoted* in Ivan Semeniuk, *Charting Canada's Troubled Waters: Where the danger Lies for Watersheds Across the Country*, THE GLOBE AND MAIL (June 21, 2017), https://www.theglobeandmail.com/news/national/canada-fresh-water-review/article35262579/ (last visited June 7, 2018)). This is no less true in the United States, as the discussion below demonstrates. *See also* Mark Bittman, *Making Sense of Water*, N.Y. TIMES (Apr. 14, 2015), https://www.nytimes.com/2015/04/14/opinion/making-sense-of-water.html?mcubz=1&_r=0 (last visited June 7, 2018).

[3] Abby Goodnough, Monica Davey & Mitch Smith, *When the Water Turned Brown*, N.Y. TIMES (Jan. 23, 2016), http://www.nytimes.com/2016/01/24/us/when-the-water-turned-brown.html (last visited June 7, 2018).

[4] *Id*.

[5] *Id.*

Flint Journal in June 2014.[6] A month later, the City of Flint sent a letter to residents saying that it was "pleased to report" that the "water is safe."[7] Ultimately, after the City publicly admitted to the water problem, an independent panel concluded that disregard for the concerns of poor and ethnic minorities contributed to the government's slow response to local residents' complaints.[8] The report concluded that "[t]he facts of the Flint water crisis lead us to the inescapable conclusion that this is a case of environmental injustice."[9] A spokesperson for the state governor characterized the crisis as "a failure of government – at the local, state and federal levels."[10]

"We are indeed all Flint," argued Dr. Philip Landrigan, a professor of preventative medicine at the Icahn School of Medicine at Mount Sinai. "Lead poisoning continues to be a silent epidemic in the United States."[11] This, however, does not diminish the tragedy of Flint, "which is particularly horrifying because it was delivered by the government through the municipal water system even as state officials scoffed at the local outcry."[12] "Flint is a teachable moment for America."[13]

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[6] *Id.*
[7] *Id.*
[8] Julie Bosman, *Flint Water Crisis Inquiry Finds State Ignored Warning Signs*, N.Y. TIMES (Mar. 23, 2016), http://www.nytimes.com/2016/03/24/us/flint-water-crisis.html (last visited June 7, 2018) [hereinafter *Inquiry Finds State Ignored Warning Signs*].
[9] *Id*.
[10] Goodnough, *supra* note 3. The governor, Rick Snyder, stated that he was repeatedly reassured by "career bureaucrats" and "so-called experts" in state government that the water was safe.
[11] Nicholas Kristof, *America is Flint*, N.Y. TIMES (Feb. 6, 2016), http://www.nytimes.com/2016/02/07/opinion/sunday/america-is-flint.html (last visited June 7, 2018). In the United States, 535,000 children ages one through five suffer from lead poisoning according to estimates from the Centers for Disease Control and Prevention.
[12] *Id*.
[13] Kristof, *supra* note 11 (quoting Dr. Richard J. Jackson, former director of the National Center for Environmental Health at the Centers for Disease Control and Prevention). In Canada, after seven people died and more than 2,300 became sick in May 2000 after E.coli bacteria polluted the drinking water in Walkerton, Ontario, Justice Dennis O'Connor headed a special commission of inquiry which released two reports: PART ONE REPORT OF THE WALKERTON INQUIRY: THE EVENTS OF MAY 2000, and RELATED ISSUES AND PART TWO REPORT OF THE WALKERTON INQUIRY: A STRATEGY FOR SAFE DRINKING WATER. Justice O'Connor observed that the involvement of a variety of groups in watershed management is critical, and that such public participation ought to be "meaningful and substantial." THE HONOURABLE DENNIS O'CONNOR, PART ONE REPORT OF THE WALKERTON INQUIRY: THE EVENTS OF MAY 2000 (2002), https://www.attorneygeneral.jus.gov.on.ca/inquiries/goudge/submissions/pdf/submissions_Dr.Charles_Smith/02-45-91-Cases_referenced_in_Dr.Smith_Submissions.pdf (last visited June 7, 2018); THE HONOURABLE DENNIS O'CONNOR, PART TWO REPORT OF THE WALKERTON INQUIRY: A

Flint is indeed a teachable moment, and not only in respect of lead poisoning. The "government failure" responsible for the crisis in Flint points indirectly to a broader failure in environmental governance, including Great Lakes governance.

During the University of Minnesota Sea Grant's Upper Great Lakes Law and Policy Symposium on "Managing Water Across Boundaries" held in March 2016,[14] for example, the Flint crisis weighed heavily – if awkwardly – in the background: heavily, because of its resonance with water governance and environmental justice in the Great Lakes region;[15] awkwardly, because of Flint's lack of direct and formal relevance to the issues under discussion. As the conference proceeded, however, the relevance of the Flint crisis to Great Lakes governance came into clearer relief. Central to both the Flint crisis and Great Lakes governance is the urgent need to better incorporate public participation into governance efforts aimed at water management and protection.

This need is particularly acute in the transboundary context of the Great Lakes.[16] According to a recent analysis conducted by the Canadian Environmental Law Association, for example, the Great Lakes executive committee, which oversees the Great Lakes Water Quality Agreement,[17] is failing to mitigate the threat of chemical pollution.[18] While environmental groups have compiled a list

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STRATEGY FOR SAFE DRINKING WATER (2002), http://www.ontla.on.ca/library/repository/mon/3000/10300881.pdf (last visited June 7, 2018).

[14] *Upper Great Lakes Law and Policy Symposium: Managing Water Across Boundaries* MINN. SEA GRANT, http://www.seagrant.umn.edu/news/managingwater (last visited June 7, 2018).

[15] One of the conference's scheduled speakers, professor Noah Hall, could not attend because he had just been appointed to the Michigan Attorney General's probe into the Flint crisis. Brad Devereaux, *Environmental Attorney Noah Hall Joins AG Probe of Flint Water Crisis*, M LIVE, http://www.mlive.com/news/index.ssf/2016/03/enviromental_legal_expert_join.html (last visited June 7, 2018).

[16] *See e.g.,* Austen L. Parrish, *Mixed Blessings: The Great Lakes Compact and Agreement, the IJC, and International Dispute Resolution*, 2006 MICH. ST. L. REV. 1299 (2006); David J. Allee, *Subnational Governance and the International Joint Commission: Local Management of the United States and Canadian Boundary Waters*, 33 NAT. RESOURCES J. 133 (1993); Dan Tarlock, *Five Views of the Great Lakes and Why They Might Matter*, 15 MINN. J. INT'L L. 21 (2006).

[17] Agreement on Great Lakes Water Quality, U.S.-Can., Nov. 22, 1978, 30 U.S.T. 1383, as amended in 2012, http://ijc.org/files/tinymce/uploaded/GLWQA%202012.pdf (last visited June 7, 2018).

[18] CAN. ENVTL. LAW ASS'N., GREAT LAKES-ST. LAWRENCE RIVER BASIN ROADMAP ON TOXIC CHEMICALS: ADVANCING PREVENTION BY PROMOTING SAFER ALTERNATIVES (2015), http://www.cela.ca/sites/cela.ca/files/GLRoadmap.pdf (last visited June 7, 2018). *See also* Colin

of more than 500 toxins for listing, the Canadian and American subcommittees administering the Great Lakes Water Quality Agreement have since its renewal in 2012 listed only four toxins, quite possibly due to the susceptibility of provincial and state governments around the Great Lakes to coordinated industry demands for weak controls on toxic chemical production.[19] According to the Canadian Environmental Law Association, "the [subcommittees'] go-slow approach is completely out of sync with the scale and urgency of the problem. We cannot wait decades to stop these chemicals getting into the lakes and then having to launch massive cleanup efforts – if that is even possible."[20]

Moreover, according to a comprehensive review of Canada's freshwater ecosystems recently conducted by World Wildlife Fund-Canada,[21] the Great Lakes figure prominently in a number of the most pressing problems identified. These include overall stress levels – the Eastern Lake Huron and the Lake Ontario and Niagara Peninsula subwatershed, for instance, are the most disturbed in Canada due to high pollution levels, water use, and ecosystem fragmentation; flow alteration; invasive species; habitat loss; and, not least, climate change.[22] However, the most significant threat of all is arguably a lack of baseline data, which hampers effective regulation. According to David Miller, World Wildlife Fund-Canada's President: "We don't know the facts. It's a recipe for inaction."[23] World Wildlife Fund-Canada's report thus recommends – among other things – a community-based citizen-science approach to data gathering, while at the same time underscoring the urgency of national and international coordination.[24] This interconnection of the subnational, national, and international levels of Great Lakes environmental governance is critical, and is explored in this article in respect of the emerging understanding of both the potential and the limitations of deliberative democracy. While such an exploration may appear tangential to the particular context of Great Lakes environmental governance, the opposite is true. The key to enhancing Great Lakes environmental governance – particularly given

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Perkel, *Urgent Action Needed to Tackle Pollution in Great Lakes: Report*, THE GLOBE AND MAIL (June 21, 2015), http://www.theglobeandmail.com/news/national/urgent-action-needed-to-tackle-pollution-in-great-lakes-report/article25051465/ (last visited June 7, 2018).

[19] *See e.g.,* Robert J. Sugarman, *Controlling Toxics on the Great Lakes: United States-Canadian Toxic Problems Control Program*, 12 SYR. J. INT'L L. & COM. 299, 304 (1985).

[20] CAN. ENVTL. LAW ASS'N., GREAT LAKES-ST. LAWRENCE RIVER BASIN ROADMAP ON TOXIC CHEMICALS, *supra* note 17.

[21] WORLD WILDLIFE FUND-CAN., A NATIONAL ASSESSMENT OF CANADA'S FRESHWATER (2017), http://www.wwf.ca/conservation/freshwater/watershedreports (last visited June 7, 2018).

[22] *Id*.

[23] Semeniuk, *supra* note 2.

[24] WORLD WILDLIFE FUND-CAN., *supra* note 21.

the complexity of its interconnected, multi-level governance regime – is enhanced democratic deliberation. Such a call for greater public participation, however, is often the conclusion rather than the premise of scholarship on environmental governance, including Great Lakes governance.[25] This article seeks to make a novel and useful contribution to this area of scholarship and policymaking by focusing a sustained and critical lens on the present limitations on democratic deliberation in environmental governance with a view to overcoming them in the future of Great Lakes environmental governance.

To that end, this article unfolds as follows. The next section places Great Lakes environmental governance in the larger legal context of the purported "myth" of transboundary environmental harm prevention. Section III examines the role of public participation in environmental governance – including environmental impact assessment – under the now-traditional notice-and-comment model, and critically examines the limits of the public's involvement and influence in environmental governance. Section IV describes an alternative, stakeholder-centered approach to facilitating meaningful public participation in environmental governance capable of potentially unmaking the myth of transboundary environmental harm prevention. In particular, this section describes an emergent community-based research and policymaking methodology – Photovoice – that is ideally suited to enhancing public participation in Great Lakes environmental governance. The article concludes with suggestions for further research into the critical question of how to enhance meaningful and influential public participation in Great Lakes environmental governance.

II. THE MYTH OF TRANSBOUNDARY ENVIRONMENTAL HARM PREVENTION

In 2005, the Great Lakes-St. Lawrence River Basin Water Resources Compact and Agreement[26] replaced the 1909 Boundary Waters Treaty, which was

[25] *See e.g.,* Allee, *supra* note 16, at 148.

[26] *Great Lakes-St. Lawrence River Basin Water Resources Compact*, GREAT LAKES COMPACT COUNCIL, http://www.glslcompactcouncil.org/Docs/Agreements/Great%20Lakes-St%20Lawrence%20River%20Basin%20Water%20Resources%20Compact.pdf (last visited June 7, 2018); *Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement*, GREAT LAKES COMPACT COUNCIL, http://www.glslcompactcouncil.org/Docs/Agreements/Great%20Lakes-St%20Lawrence%20River%20Basin%20Sustainable%20Water%20Resources%20Agreement.pdf (last visited June 7, 2018) [hereinafter and collectively, "Compact and Agreement"]. The Compact and Agreement were ratified by the state legislatures of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin, and the provincial legislatures of Ontario and

administered by the International Joint Commission (IJC).[27] Article IV of the Boundary Waters Treaty provides "that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other."[28]

Article IV's prohibition of transboundary pollution in 1909 prefigures the development of international environmental law some six decades later. Transboundary harm prevention figures importantly in almost all international environmental treaties concluded in the last 40 years[29] and constitutes the cornerstone of international environmental law as expressed by Principle 21 of the 1972 Stockholm Declaration:

> States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[30]

As John Knox observes, however, Article IV of the Boundary Waters Treaty and Principle 21 have more in common than their ostensibly absolute

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Québec. Pursuant to the Compact and Agreement, the member states and provinces agreed to prohibit diversions out of the Basin, with limited exceptions for communities that straddle the Basin. They also agreed to minimum standards regarding major water withdrawals for use within the Basin as a conservation measure, with large consumptive uses triggering a regional review to be conducted by representatives of all 10 member governments. For further details about the Compact and Agreement, including an assessment of its strengths and weaknesses, see MARCIA VALIANTE, *Management of the North American Great Lakes in* MANAGEMENT OF TRANSBOUNDARY RIVERS AND LAKES 245 (O. Varis, C. Tortajada & A.K. Biswas, eds., Springer, 2008).

[27] Treaty Between the United States and Great Britain Relating to Boundary Waters between the United States and Canada, U.S.-Gr. Brit., Jan. 11. 1909, T.S. No. 548, [hereinafter Boundary Waters Treaty].

[28] *Id*.

[29] John H. Knox, *The Boundary Waters Treaty: Ahead of its Time, and Ours*, 54 WAYNE L. REV., 1591 (2009).

[30] Declaration of the United Nations Conference on the Human Environment, United Nations Conference on the Human Environment, June 5-16, 1972, U.N. Doc. A/CONF.48/14, Principle 21 (Jun. 16, 1972). *See* Philippe Sands, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 190 (Cambridge Univ. Press, 1995).

prohibitions of transboundary environmental harm.[31] Neither provision is fully complied with by states. Pollution routinely crosses borders without states acting as if international law has been violated.[32] "To say that a state has no right to injure the environment of another seems quixotic in the face of the great variety of transborder environmental harms that occur every day."[33]

Similarly, Canada and the United States have failed to meet the terms of Article IV.[34] Notwithstanding efforts by both governments to ensure water quality in the Great Lakes, including through the Great Lakes Water Quality Agreement,[35] transboundary pollution continues apace. In a recent comprehensive report on Great Lakes water quality, the IJC concluded that while "the Lakes today are less polluted than they were decades ago … toxic, human, animal, and industrial wastes, as well as pharmaceuticals and airborne substances, continue to pollute our Lakes. Ongoing urban development, invasive species and climate change present additional challenges."[36]

While some observers lament the decline of the IJC and its former role in administering the Boundary Waters Treaty,[37] doubts about its ultimate effectiveness began with its very negotiation. As Knox recounts, the chief U.S. negotiator of the treaty described Article IV as "perhaps … too strong."[38] According to Toope and Brunnee, "the more the IJC attempted over the years to … address transboundary environmental relations more comprehensively, the more was its freedom of action curtailed by increasingly reluctant governments,

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[31] For example, after being granted the power to investigate a particular dam project in the mid-1970's, the IJC suggested to the Canadian and U.S. governments that they negotiate more detailed norms for "prior notice and consultation" to bring the Boundary Waters Treaty in line with the 1972 Stockholm Declaration. In response, the IJC was rebuffed in no uncertain terms. The then Canadian Secretary of State for External Affairs wrote to the IJC suggesting that the governments would "call upon the IJC for assistance on appropriate occasions." *See* David LeMarquand, *The International Joint Commission and Changing Canada-United States Boundary Relations*, 33 NAT'L RESOURCES 59, at 75, n. 106 (1933) (quoting letter from A. MacEachen, Sec. of State for External Affairs, to D. Chance, Sec. of the Canadian Section of the IJC (12 July 1976)).
[32] Knox, *supra* note 29.
[33] Oscar Schachter, *The Emergence of International Environmental Law*, 44 J. OF INT'L AFF. 457 at 463 (1991).
[34] *Id.*
[35] Agreement on Great Lakes Water Quality, *supra* note 17.
[36] INT'L JOINT COMM'N, THIRTEENTH BIENNIAL REPORT ON GREAT LAKES WATER QUALITY 1, (2006), http://www.ijc.org/php/publications/pdf/ID1601.pdf (last visited June 7, 2018).
[37] Parish, *supra* note 16.
[38] LeMarquand, *supra* note 31, at 67.

not allowing the IJC to fully utilize the powers it had nominally been granted."[39] Article IV, it turns out, is more of a capstone than a cornerstone: "in order to be able to place it, countries must do much more to address the problems whose cessation it envisages."[40]

The creation of a new sub-national regulatory regime in the form of the Great Lakes Compact and Agreement, however, has not filled the void left by the hollowing out of the international Boundary Waters Treaty and the IJC, which now performs a far more circumscribed research and reporting role. In its 2015 report on the Great Lakes, for example, the IJC observed that the "Agreement and Compact may not be sufficient to deal with all potential future water issues and emerging trends in common and statutory law."[41] More fundamentally, decisions about whether to prevent transboundary environmental harm remain at the discretion of individual states.[42] Accordingly, the displacement of transboundary Great Lakes environmental governance from the international level to the sub-national level simply displaces the underlying political problem from one level of government to another. This displacement is illustrated by the IJC's recommendation regarding Great Lakes governance and climate change:

> Considering the large uncertainties surrounding climate change and other human impacts on the hydrologic cycle, federal, provincial and state governments *should*, in addition to continuing to take an adaptive management approach in decision-making, incorporate climate resilience into policies and management practices regarding decision-making for diversions, consumptive use, and lake level management. Provincial and state governments *should* survey how widespread the development and adoption of adaptation strategies are across the Basin. Advancements in the state of science on climate change impacts in the Great Lakes *should* be encouraged by federal, state and provincial governments

[39] Stephen J. Toope & Jutta Brunnee, *Freshwater Regimes: The Mandate of the International Joint Commission*, 15 ARIZ. J. INT'L & COMP. LAW 273 at 275 (1998).
[40] Knox, *supra* note 29.
[41] INT'L JOINT COMM'N, PROTECTION OF THE WATERS OF THE GREAT LAKES: 2015 REVIEW OF THE RECOMMENDATIONS FROM THE FEBRUARY 2000 REPORT 7, (2015), http://ijc.org/files/tinymce/uploaded/Publications/IJC_2015_Review_of_the_Recommendations_of_the_PWGL_January_2016.pdf (last visited June 7, 2018).
[42] Knox, *supra* note 29. *See also* Toope & Brunnee, *supra* note 39, at 276 (arguing that the "IJC will only be as strong and as effective as the Canadian and U.S. governments allow it to be").

> through further funding and a synthesis of the state of the science.[43]

Notably, the IJC further recommends:

> *As part of a precautionary approach for limiting climate change impacts on Great Lakes water resources, state and provincial governments should urge the federal governments of Canada and the United States to aggressively pursue strategies for reducing greenhouse gas emissions.*[44]

No matter the level of government, however, the critical analytic question is how to compel responsible governments to act responsibly and commit to transboundary environmental protection of the Great Lakes. This raises the issue of the role and ultimate influence of public participation in environmental governance, both through the regime of environmental impact assessment (EIA) and other governance mechanisms, as a potential counterbalance to the interests of industry and organized labour, and those interests' evident capture of various levels of government.[45]

III. ENVIRONMENTAL IMPACT ASSESSMENT: PUBLIC INFORMATION, OR PUBLIC IGNORANCE?

The IJC recommends broad-based collaboration among public and private sectors to enhance water stewardship by fixing leaking public water infrastructure, supporting innovation, and increasing funding to close the region's water infrastructure deficit, unlock water conservation potential and encourage a water stewardship focus region wide.[46]

International environmental law scholars generally agree that Principle 21 logically requires states to assess the potential transboundary impacts of activities

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[43] INT'L JOINT COMM'N, *supra* note 41, at 13 [emphasis added].
[44] *Id*. [emphasis added].
[45] Likewise, institutional reform (*e.g.,* of the IJC, which is often called for) is a secondary rather than primary issue. As Toope & Brunnee argue, "[a]ny reforms to the IJC should focus on improvements at a procedural level, to expedite the fact-finding function. In the longer term, *if a political commitment to ecosystem protection grows*, the IJC may evolve into a more autonomous institution with powers of norm-generation." Toope & Brunnee, *supra* note 41 at 287 [emphasis added].
[46] *Id*. at 15. *See also* Maude Barlow, LIQUID PIPELINE: EXTREME ENERGY'S THREAT TO THE GREAT LAKES AND THE ST. LAWRENCE RIVER (Ottawa: The Council of Canadians, 2014).

that may cause transboundary environmental harm (*i.e.,* transboundary EIA).[47] Phoebe Okowa explains the function of transboundary EIA in the following way:

> The duty to carry out environmental impact assessments, as well as the duties of notification and exchange of information, only make sense if in the end an objection by a notified State is taken into account. In other words, the ultimate goal of such notification and supply of relevant information is to require the State of origin to accommodate the interests of the notified State, and if need be to adopt mitigative strategies for its benefit. The aim in each case is to ensure that the activity is carried out in a manner least harmful to the environment.[48]

According to Knox, transboundary EIA is an outgrowth, not of Principle 21, but of national EIA regimes, the first of which was the U.S. National Environmental Policy Act of 1969 (NEPA).[49] EIA now forms part of the domestic environmental law of about a hundred nations.[50] The basic principles of domestic EIA continue to closely resemble those originally established in NEPA. Domestic EIA laws generally require government decision-makers to consider the environmental (*i.e.,* biophysical) impacts of proposed activities and projects prior to authorization.

Notably, domestic EIA laws typically give interested members of the public an opportunity to comment on the project proposals at some stage of the EIA, and further provide that the final EIA report be made public. It is well established that enhanced opportunities for public participation have improved the quality of environmental governance.[51] As noted above, structures for public

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[47] Knox, *supra* note 29. *See also* Andre Nollkaemper, THE LEGAL REGIME FOR TRANSBOUNDARY WATER POLLUTION: BETWEEN DISCRETION AND CONSTRAINT 180 (1993); Catherine A. Cooper, *The Management of International Environmental Disputes in the Context of Canada-United States Relations: A Survey and Evaluation of Techniques and Mechanisms*, CAN. Y.B. INT'L L. 247, 303 (1986).

[48] Phoebe N. Okowa, *Procedural Obligations in International Environmental Agreements*, BRIT. Y.B. INT'L L. 275, 302 (1996) (footnote omitted).

[49] 42 U.S.C. §§4321-4370f.

[50] Barry Sadler, ENVIRONMENTAL ASSESSMENT IN A CHANGING WORLD: EVALUATING PRACTICE TO IMPROVE PERFORMANCE 25 (1996).

[51] *See e.g.* MARK WINFIELD, METCALF FOUND. GREEN PROSPERITY PAPERS, A NEW ERA OF ENVIRONMENTAL GOVERNANCE IN CANADA: BETTER DECISIONS REGARDING INFRASTRUCTURE AND RESOURCE DEVELOPMENT PROJECTS (2016), https://metcalffoundation.com/stories/publications/a-new-era-of-environmental-governance-in-

participation were originally significant features of EIA.[52] More specifically, these structures have typically included public notices and invitations to comment on proposed projects, opportunities to make depositions and, in some cases, more formal presentations of evidence before EIA panels and hearings.[53] However, despite widespread legal provisions for some form of public participation in EIA processes, the degree of actual public participation – beyond the participation of special interests, academics, and NGOs – in EIA processes has remained rather low.[54] Moreover, domestic EIA is not generally – if ever – deployed by governments to actually prevent projects and activities that carry serious (even irreversible) biophysical impacts from being implemented. Rather, the aim of EIA is for such projects and activities to be authorized and undertaken in the full knowledge of their environmental impacts. After all, "EIA takes place in a political context: it is therefore inevitable that economic, social or political factors will outweigh environmental factors in many instances."[55] Accordingly, significant as opportunities for public participation in EIA processes have proven in some instances under the domestic environmental laws of certain states, "*their ability to alter the trajectory of economic activities in the direction of sustainability has never been fully realized*."[56]

These limitations notwithstanding, public participation in environmental governance still has the potential to facilitate the meaningful inclusion of diverse perspectives, which are in turn capable – arguably *most* capable – of thoroughly and reliably reviewing project proposals.[57] According to a recent analysis of eight case studies of EIAs involving Indigenous groups in Canada, for instance, greater Indigenous community participation resulted in improved project design, the

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canada/ (last visited June 7, 2018); *But see generally*, JASON BRENNAN, AGAINST DEMOCRACY (Princeton Univ. Press, 2016).

[52] A. John Sinclair & Alan P. Diduck, *Public Participation in Canadian Environmental Assessment: Enduring Challenges and Future Directions" in* ENVIRONMENTAL IMPACT ASSESSMENT PROCESS AND PRACTICES IN CANADA 65 (K.S. Hanna, ed., 3rd ed. 2015).

[53] *Id*. at 11. In the U.S. context, "legitimating public participation, and demanding openness in planning and decision-making, has been indispensable to a permanent and powerful increase in environmental protection": Joseph Sax, *Introduction* in 19 U. MICH. J. LAW REFORM 797, at 804 and n. 28.

[54] *See e.g.* Judith Petts, *Public Participation and Environmental Impact Assessment*, *in* 1 HANDBOOK OF ENVIRONMENTAL IMPACT ASSESSMENT: ENVIRONMENTAL IMPACT ASSESSMENT IN PRACTICE: IMPACT AND LIMITATIONS (Judith Petts, ed., 1999).

[55] CHRISTOPHER WOOD, ENVIRONMENTAL IMPACT ASSESSMENT: A COMPARATIVE REVIEW 2-3 (1995).

[56] *Id*. at 7 (emphasis added).

[57] Robert B. Gibson et al., *Fulfilling the Promise: Basic Components of Next Generation Environmental Assessment*, 29 J. OF ENVTL. L. & PRAC. 252 (2016).

integration of new knowledge about potential impacts, the discovery of new ways to mitigate environmental damage and community impacts, and the opportunity for even greater collaboration.[58]

Such enhanced collaboration, however, will only be achieved by encouraging and enabling the equal and ongoing participation of a plurality of voices. While the traditional "notice and comment" approach is capable of furnishing decision-makers with more information, a better understanding of the competing interests at stake, and the likely consequences of different courses of action, this approach neither accounts for nor alters the inequality of resources, power, and influence among different social and political groups. Indeed, reliance on notice-and-comment-style public participation may actually *further entrench* this inequality. Decision-makers are rarely if ever legally obligated to respond to issues raised in public comments, and in practice, the most influential comments tend to be those that provide decision-makers with the kinds of data and sophisticated analyses that can readily be used to justify decisions.[59] Representative government "has given way to a world in which the prime minister's courtiers talk to a handful of senior Cabinet ministers, a few carefully selected deputy ministers, lobbyists, former public servants turned consultants, heads of friendly associations, and some CEOs of larger private firms. This permeates all aspects of government – even regulation."[60]

But this is not all. A typical move in an analysis of the kind pursued thus far in this article is to proceed to describe and advocate for new potential forms of

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[58] BRAM NOBLE, MACDONALD-LAURIER INST., LEARNING TO LISTEN: SNAPSHOTS OF ABORIGINAL PARTICIPATION IN ENVIRONMENTAL ASSESSMENT, (2016), https://www.macdonaldlaurier.ca/files/pdf/Noble_StewardshipCaseStudies_F_web.pdf (last visited June 7, 2018). Conversely, the lack of tribal consultation and public participation in respect of the Dakota Access Pipeline permit approval process may well have been a major driver of public protests against that project. I am grateful to an anonymous reviewer for this point.

[59] *See generally*, Mariano-Florentino Cuellar, *Rethinking Regulatory Democracy*, 57 ADMIN. L. REV. 411(2005). In the context of U.S. banking reform, one commentator observed that in responding to public comments, financial "regulators crave data that can be used to justify decisions" while "historically, industry groups have dominated these information wars, plying regulators with exhaustive studies and detailed analyses of the options at hand. Trade groups have more money and more people, and they often produce and control the relevant information about business and customers." *See* Binyamin Appelbaum, *On Finance Bill, Lobbying Shifts to Regulations*, (N.Y. TIMES, June 27, 2010), at A1.

[60] DONALD J. SAVOIE, WHAT IS GOVERNMENT GOOD AT? A CANADIAN ANSWER 266 (McGill-Queen's Univ. Press, 2015). This pattern is equally evident in the United States. *See e.g.* LEE DRUTMAN, THE BUSINESS OF AMERICA IS LOBBYING: HOW CORPORATIONS BECAME POLITICIZED AND POLITICS BECAME CORPORATE (Oxford Univ. Press, 2015).

enhanced opportunities for meaningful public participation in environmental governance, such as the IJC's recommendation that anchors this section.[61] However, there is still another limitation to the public's ability to influence the course of environmental decision-making, a limitation that is also a serious challenge to the underlying normative commitment to greater public participation in public interest governance, or what is often called "deliberative democracy" or "republicanism."[62] Namely, public ignorance. According to legal scholar Ilya Somin, "[t]he evidence shows that political ignorance is extensive and poses a very serious challenge to democratic theory."[63] For Somin, political ignorance is rational for most citizens. Voters *qua* voters have little incentive to become informed because there is only an infinitesimal chance that any one vote will influence the outcome of an election. This, argues Somin, explains why so many members of the public remain ignorant about basic political issues, despite the fact that basic political information is readily available. Indeed, political knowledge – as revealed principally through representative surveys and polling practices – has not increased along with corresponding increases in the overall level of education in western democratic countries.[64] Political ignorance is not inadvertent. The issue is one of demand, not supply (let alone cognitive capacity): "The main constraint on political learning is not the availability of information, but the willingness of voters to take the time and effort needed to learn and understand it."[65]

Moreover, experimental studies show that individuals tend to use newly acquired information to reinforce their preexisting views on political and other ideological issues while discounting evidence that runs counter to them. Such "rational irrationality," where the object of gathering and processing new political information is not political knowledge itself, but to reinforce preexisting

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[61] *See also* CAN. INST. FOR ENVTL. LAW & POL'Y, PUBLIC PARTICIPATION IN WATER MANAGEMENT IN THE GREAT LAKES: PROVINCIAL AND JOINT INITIATIVES, 4 (2004), (arguing that "a number of organizations involved in the management of the Great Lakes require improved public participation").

[62] *See e.g.* James S. Fishkin, *Deliberative Democracy and Constitutions*, 28 SOC. PHIL. & POL'Y, 242-260; CASS R. SUNSTEIN, THE PARTIAL CONSTITUTION (Harv. Univ. Press, 1993); AMY GUTMAN & DENNIS THOMPSON, DEMOCRACY AND DISAGREEMENT (Belknap Press, 1996).

[63] ILYA SOMIN, DEMOCRACY AND POLITICAL IGNORANCE: WHY SMALLER GOVERNMENT IS SMARTER 3 (Stan. Univ. Press).

[64] *Id.* at 76.

[65] *Id*. at 3. For an analysis of this phenomenon as it plays out in respect of the highly technical language of agribusiness and environmental protection of the Great Lakes ("agriculturalese"), see T.S. Harvey, *Muddying the Waters: Protection, Public Participation, and Ambiguity in the Language of Pollution in the Great Lakes*, 37 J. OF CULTURE & AGRIC. 107 (2015).

viewpoints and group attachments,[66] may be even more of a threat to deliberative democracy that pure voter ignorance.

The problem, however, runs deeper still. Somin argues that "the prospects for a major increase in political knowledge in the foreseeable future seem relatively bleak."[67] As noted above, previous increases in education levels have not lead to greater political knowledge. Somin proceeds to review Ackerman and Fishkin's much-discussed proposal, whereby, prior to each election day, the government would declare a national holiday called "Deliberation Day" during which all voters would have the opportunity to gather in groups of 500 and hear presentations on key issues by representatives of major political parties. Following the presentations, voters would be able to ask questions and discuss the issues among themselves.[68] Fishkin's extensive research on the use of "deliberative polling," which shows that many deliberative poll participants changed their minds about various political issues after hearing opposing arguments,[69] lends support to the "Deliberation Day" proposal.

While a "Deliberation Day" would almost certainly increase voter knowledge to some degree, Somin is nonetheless right in observing that such deliberations would not be capable of covering even a fraction of the almost infinite variety of issues regulated by the modern state. To cover a greater fraction of the government's agenda, multiple "Deliberation Days" would be required throughout the election cycle, greatly increasing their cost and the unlikelihood of continued public engagement.

Somin is equally right to observe that any given "Deliberation Day" would be shaped by incumbent political leaders, who would determine the issues to be discussed and select the party representatives who would participate. "This process would create numerous opportunities for manipulation."[70] This incumbency issue is significant. As Kaiser notes, "to pass such [democratic] reforms would upend the culture that has evolved in modern times, the culture that has served today's incumbent politicians well…. The avid supporters of real

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[66] SOMIN, *supra note* 63, at 79; *See also* BRYAN CAPLAN, THE MYTH OF THE RATIONAL VOTER: WHY DEMOCRACIES CHOOSE BAD POLICIES (2007); *see also* works of Dan M. Kahan, *available at* http://www.culturalcognition.net/kahan/ (last visited June 7, 2018).
[67] SOMIN, *supra* note 63, at 190.
[68] BRUCE ACKERMAN & JAMES S. FISHKIN, DELIBERATION DAY (2004).
[69] *See e.g.,* JAMES S. FISHKIN, WHEN THE PEOPLE SPEAK: DELIBERATIVE DEMOCRACY AND PUBLIC CONSULTATION (2009).
[70] SOMIN, *supra* note 63, at 179.

reform on Capitol Hill are few, the cynics many."[71] Somin neatly describes this catch-22 dilemma:

> As with proposals to increase political knowledge by improving civic education, a well-informed electorate could potentially force elected officials to enact a relatively unbiased Deliberation Day, one that would at least genuinely increase political knowledge on as many issues as could reasonably be covered within the allotted time. Knowledgeable voters could detect and punish incumbent politicians' efforts to manipulate the framework of Deliberation Day for their own benefit. *However, an electorate that knowledgeable would likely have little need for Deliberation Day in the first place.*[72]

Somin proceeds to canvass additional reform proposals, from restricting the franchise to voters having a high level of education, to improving media coverage of politics, to delegating power to experts who are insulated from the political process.[73] However, the latter approach, while inevitable to a certain degree in any complex administrative state, can result in a lack of democratic accountability, just as widespread ignorance threatens democracy. Excessive delegation to experts can lead to lobbying by special interest groups to advance their own interests at the expense of the public, which can be exacerbated by public political ignorance. As Sunstein and Kuran have shown, public interests and cognitive biases may enable special interest groups to influence public opinion and create irresistible political pressure to make policy and significant expenditures on minor, even nonexistent health risks, while other more serious risks may go unaddressed.[74]

Worse still, delegation to experts insulated from political influence may also insulate delegated experts from broader political accountability. Voters, on Somin's theory, are unlikely to be effective monitors of elected officials'

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[71] ROBERT G. KAISER, SO MUCH DAMN MONEY: THE TRIUMPH OF LOBBYING AND THE CORROSION OF AMERICAN GOVERNMENT 358 (Knopf, 2009). *See also* Jason MacLean, *Striking at the Root Problem of Environmental Law: Identifying and Escaping Regulatory Capture*, 29 J. ENVTL. LAW & PRAC. 111 (2015).
[72] SOMIN, *supra* note 63, at 180.
[73] *See e.g.,* CASS R. SUNSTEIN, RISK AND REASON: SAFETY, LAW AND THE ENVIRONMENT (Oxford Univ. Press, 2002).
[74] Cass R. Sunstein & Timur Kuran, *Availability Cascades and Risk Regulation*, 51 STAN. L. REV. 683 (1999).

supervision of experts, again for the same reasons that necessitate the experts' insulation in the first place.[75] This insight has lead to the call by a number of commentators to *embrace* rather than seek to avoid the political dimensions of public interest governance.[76]

Before proceeding in the next section to set out an alternative democratic model of public participation applicable to environmental governance in general and Great Lakes governance in particular,[77] a word about Somin's proposed response to low citizen demand for political knowledge (and, by extension, participation) is in order. Somin argues that because voters' political knowledge can only be increased modestly at the margins, we should have "greater pessimism about democratic government and a willingness to leave more decisions under the control of the market, civil society, and decentralized political institutions…. At least for the foreseeable future, it seems unlikely that deliberative democracy is a realistic possibility."[78]

Somin's ultimate argument for less government and more market governance, however, overlooks two important points. First, there is convincing empirical evidence (ignored by Somin) demonstrating that American voters already have little influence over the direction of public policy directions and outcomes. For example, in a widely discussed paper,[79] political scientists Martin Gilens and Benjamin Page pose an analytic question closely related to Somin's. Whereas Somin analyzes the threat of an uninformed electorate to democratic accountability, Gilens and Page analyze the risks associated with the electorate's

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[75] SOMIN, *supra* note 63, at 184.

[76] *See e.g.,* Drutman, *supra* note 59; *see also* K. Sabeel Rahman, *Envisioning the Regulatory State: Technocracy, Democracy, and Institutional Experimentation in the 2010 Financial Reform and Oil Spill Statutes*, 48 HARV. J. LEGIS. 555 (2011); K. Sabeel Rahman, *Conceptualizing the Economic Role of the State: Laissez-Faire, Technocracy, and the Democratic Alternative*, 43 POLITY 264 (2011).

[77] For a preliminary analysis of the limitations of public participation in Great Lakes governance and planning, see THOMAS C. BEIRERLE & DAVID M. KONISKY, PUBLIC PARTICIPATION IN ENVIRONMENTAL PLANNING IN THE GREAT LAKES REGION, RES. FOR THE FUTURE (1999).

[78] SOMIN, *supra* note 63, at 192, 198.

[79] Martin Gilens & Benjamin I. Page, *Testing Theories of American Politics: Elites, Interest Groups, and Average Citizens* 12 PERSP. ON POL. 564 (2014). The paper generated a number of newspaper headlines, including one by the BBC. *Study: US is an Oligarchy, Not a Democracy* BBC (April 17, 2014), http://www.bbc.com/news/blogs-echochambers-27074746 (last visited June 7, 2018). *See also* John Cassidy, *Is America an Oligarchy?*, THE NEW YORKER (Apr. 18, 2014), https://www.newyorker.com/news/john-cassidy/is-america-an-oligarchy (last visited June 7, 2018).

lack, not of political information, but of political influence. They frame the problem this way:

> Americans do enjoy many features central to democratic governance, such as regular elections, freedom of speech and association, and a widespread (if still contested) franchise. But we believe that if policymaking is dominated by powerful business organizations and a small number of affluent Americans, then America's claims to being a democratic society are seriously threatened.[80]

Gilens and Page conducted a multivariate analysis of 1,179 policy issues between 1981 and 2002 in which a national survey of the general public asked a "favor/oppose" question about a proposed policy change. For each case, the authors used background survey data to cross-reference responses to income levels. The authors then assessed whether or not the proposed policy change was actually adopted within four years after the question was asked. The authors concluded that in "the United States, our findings indicate, the majority does not rule—at least not in the causal sense of actually determining policy outcomes. When a majority of citizens disagrees with economic elites and/or with organized interests, they generally lose. Moreover … even when fairly large majorities of Americans favor policy change, they generally do not get it."[81]

Interestingly, Gilens and Page anticipate Somin's argument about voter ignorance, and posit it as a potential response to their analysis. They write:

> Average citizens are inattentive to politics and ignorant about public policy; why should we worry if their poorly informed preferences do not influence policy making? Perhaps economic elites and interest group leaders enjoy greater policy expertise than the average citizen does. Perhaps they know better which policies will benefit everyone, and perhaps they seek the common good, rather than selfish ends, when deciding which policies to support…. But we tend to doubt it.[82]

[80] Gilens & Page, *supra* note 79, at 577.
[81] *Id.* at 576.
[82] *Id*.

Accordingly, an uninformed, disengaged citizenry does not create the *risk* of special interest influence, regulatory capture, and a lack of democratic accountability; these two features – voter ignorance and outsize special interest and elite influence – describe the *reality* of contemporary democratic governance. Indeed, citizen disengagement may be the result, direct or indirect, of the kind of bipartite bargaining between governments and industry that maligns much environmental decision-making.[83] As noted above in the introduction, this special interest influence especially plagues Great Lakes environmental governance, whereby provincial and state governments have succumbed to coordinated industry demands for – *inter alia* – weak controls on toxic chemical production.[84]

Which leaves open the question of governance in the public interest, and the second issue that Somin's otherwise perspicacious analysis overlooks, an issue that remains overlooked in legal and public policy analyses. Markets are not the diametrical opposite of government regulations. The so-called "free market" is very much a specific regulatory choice, and the product of very sophisticated state initiatives and institutions designed to recognize and enforce rights in property and contract, as well as to facilitate their identification and exchange.[85] Deregulation, therefore, is in essence *reregulation* where the delegates of regulatory power are not subjected to due process controls over the exercise of their delegated discretion. The relevant policy instrumentality choice is not a question of whether or not to regulate, or how much regulation is optimal. The choice is what kind of regulation to deploy in a given governance context.

Accordingly, in order to improve environmental governance, particularly the interconnected subnational, national, and international levels of Great Lakes environmental governance, and unmake the myth of transboundary environmental harm prevention, new instrumentalities for enhancing public participation are urgently needed.[86] But such new instrumentalities must address Somin's account of the lack of popular public demand for political knowledge and participation. The next section of this article brings these two concepts together.

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[83] *See e.g.,* Winfield, *supra* note 51.
[84] Sugarman, *supra* note 19.
[85] *See e.g.,* JOSEPH WILLIAM SINGER, NO FREEDOM WITHOUT REGULATION: THE HIDDEN LESSON OF THE SUBPRIME CRISIS (Yale Univ. Press, 2015).
[86] For an early analysis along these lines, *see* David M. Konisky & Thomas C. Beirle, *Innovations in Public Participation and Environmental Decision-Making: Examples from the Great Lakes Region*, 14 SOC'Y & NAT. RESOURCES 815 (2001); *see also* Mimi Larsen Becker, *The International Joint Commission and Public Participation: Past Experiences, Present Challenges, Future Tasks*, 33 NAT. RESOURCES J. 235 (1993).

IV. ENHANCING PUBLIC PARTICIPATION IN THE WILD: A THOUSAND PICTURES IS WORTH A WORD (WITH POLICYMAKERS)

There is a large number of jurisdictions in Canada working on the Great Lakes issues. Although numerous government organizations have public participation included in their agendas their actions often focus on public relations efforts to gain citizen approval on specific projects rather than incorporating citizens into the decision-making process.[87]

In order to make public participation in various forms of deliberative democracy – including environmental governance – more attractive, some scholars have turned their attention to the question of process design "in the wild" (*i.e.,* in the messy reality of everyday practice in forums committed to open participation). A pioneering example of such work is the comparative study lead by Cynthia Farina and Hoi Kong of two deliberative democracy field projects: the McGill University Online Design Studio (MODS),[88] which facilitates public participation in Canadian urban planning, and RegulationRoom,[89] which supports public comment in U.S. federal rulemaking.[90] The authors argue that "conscious attention to process design can make it more likely that more participants will engage in informed, thoughtful, civil, and inclusive discussion."[91]

Both projects are ambitious attempts to support participants of varying competencies to invest the effort required for meaningful participation in the making of important public policy decisions.[92] This is an enormously complex undertaking. Open – *i.e.,* truly democratic – participation necessarily implies a substantial lessening of control over the process and its participants (hence their

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[87] CANADIAN INST. FOR ENVTL. LAW & POLICY, *supra* note 61, at 20.
[88] *See* Mark Witten, *Open Door Policy*, 8 HEADWAY 1, 9 (2014), https://www.mcgill.ca/research/files/research/hw8_1_eng_final_web.pdf (last visited July 20, 2018).
[89] *Regulation Room*, CORNELL UNIVERSITY, http://regulationroom.org/ (last visited June 7, 2018).
[90] Cynthia R. Farina et al., *Democratic Deliberation in the Wild: The McGill Online Design Studio and the RegulationRoom Project*, 41 FORDHAM URB. L. J. 1527 (2014). For a review of related forms of deliberative democratic experiments, including National Issue Forums, citizen juries, and consensus conferences, see THE DELIBERATIVE DEMOCRACY HANDBOOK: STRATEGIES FOR EFFECTIVE CIVIC ENGAGEMENT IN THE TWENTY-FIRST CENTURY (John Gastil & Peter Levine, eds., 2005).
[91] Farina et al., *supra* note 90 at 1528.
[92] *Id*. at 1533; *see also* Cynthia R. Farina et al., *Rulemaking vs. Democracy: Judging and Nudging Participation that Counts*, 2 MICH. J. ENVTL & ADMIN. L. 123, 160-62 (2012).

description as "democratic deliberation in the wild").[93] And as noted above, when it comes to policymaking and rulemaking, sophisticated stakeholders such as large corporations, professional and trade associations, consultants and lobbyists, and national advocacy groups are masters of the process and can participate effectively, often at the expense of other groups of stakeholders – small business owners, community groups, newly-formed coalitions, concerned citizens – who tend to be less expert in navigating complex political processes, and who therefore tend to exercise negligible influence over the policymaking process.[94] As Farina and Kong put it: "the contributions of citizen participants new to the [policymaking] process will sound very different from the comments and other submissions that government officials are accustomed to getting from experienced stakeholders."[95] Accordingly, it is critical to identify barriers to public participation that tend to shut out contributors other than the "usual suspects" and think through strategies for lowering, if not removing entirely, those barriers.

Through their comparison of MODS and RegulationRoom, Farina and Kong identify four principal barriers that tend to impede both broader and better public participation in complex policymaking processes: (1) lack of awareness of relevant, applicable policymaking processes; (2) information overload of highly complex and technical information; (3) low participation literacy, often resulting in limited and superficial public inputs to the policymaking process; and, most importantly, (4) motivational issues arising out of public cynicism regarding the fairness and efficacy of government that tends to lower the public's demand for policymaking participation opportunities in the first place.[96]

The lessons of the MODS and RegulationRoom projects are too complex and context-specific to adequately summarize here; their importance warrants full and direct consideration. But the authors' overarching lesson is particularly instructive for the specific purposes of this article: "No clever democratic deliberation 'app' will be able to technologically obliterate the barriers that have historically kept missing stakeholders from meaningful participation. Getting

[93] Farina et al., *supra* note 90, at 1537.
[94] *See* Appelbaum, *supra* note 59; *See also* Cynthia R. Farina, *Knowledge in the People: Rethinking "Value" in Public Rulemaking Participation*, 47 WAKE FOREST L. REV. 1185, 1186 (2012).
[95] Farina et al., *supra* note 90, at 1573.
[96] *Id.* at 1550. It is important to note that broader participation, without attention to design, does not necessarily imply better participation. These goals must be treated as analytically distinct, if nonetheless closely related.

broader, better citizen engagement in government decision making will be effortful for government as well as for citizens."[97]

This rich governance lesson is really three lessons: (1) as the authors state earlier in their analysis, deliberation is hard work;[98] (2) no matter how well a process is designed, no matter how accessible the process is made for ordinary citizens, citizens may still stay home – even if you build it, they may not come; and (3) government support is indispensible.

Let us take the third lesson – governments must step up – first. Farina and Kong suggest (rightly) that where there are groups of citizens who will be affected by policies who have historically not engaged in policymaking processes, and who are likely to have experiential, "situated" knowledge relevant to policymaking processes, and where it is reasonably possible to facilitate the policymaking participation of such stakeholders, "government officials can identify the policymaking initiatives in which an investment in deliberative structures for broader citizen engagement is most likely to produce valuable and satisfying results."[99]

This is eminently reasonable, but it elides the question of "valuable and satisfying" to whom? Recall the research of Gilens and Page discussed above.[100] In the largest empirical study of actual policy decisions by the U.S. government in the history of political science, they show that "[w]hen the preferences of economic elites and the stands of organized interest groups are controlled for, *the preferences of the average American appear to have only a minuscule, near-zero, statistically non-significant impact upon public policy*."[101] More specifically in the context of Great Lakes governance, recall too the complaints of environmental activists and scholars alike that the governments around the Great lakes have little interest in mitigating the risks of chemical pollution in the face of coordinated industry opposition.[102]

Accordingly, when Farina and Kong suggest, once again eminently reasonably, that "[i]f officials listen in an open-minded and active way to the outputs of public participation, they can identify what really matters to various

[97] *Id.* at 1579.
[98] *Id.* at 1559.
[99] *Id.* at 1567-68.
[100] Gilens & Page, *supra* note 79.
[101] *Id.* at 575 (emphasis added).
[102] *See infra* Part I.

participants,"[103] suffice it to say that is a *really big if*. Once again in the context of Great Lakes governance, environmental groups and scholars have also called for preventing the entrance of invasive species and prohibiting the transport of chemical-laden toxic energy sources near or on the Great Lakes and St. Lawrence River. All to no avail.

Thus when Farina and Kong suggest that "policymakers who believe in the value of public participation are likely to gain insight and guidance from the addition of historically silent voices; those who do not expect to learn much from broader citizen involvement probably will not,"[104] their analysis is correct but incomplete. Correct, because greater public participation in policymaking would be a marked departure from the status quo and would therefore require greater care and consideration than policymakers have hitherto been required to commit; but incomplete, because the more pressing question is how to bring about this change in the status quo in the first place in the face of the catch-22 nature of incumbency inertia and regulatory capture.[105]

Which brings us to the remaining two lessons, which can be grouped into a single issue: how to bring about broader, better public participation in the policymaking process, including the meta-process of bringing about broader, better public pressure for governments' support of broader, better public participation in the policymaking process? In Farina and Kong's analytic framework, this requires not only winning the "battle for attention"[106] but also overcoming what they describe as the most intransigent motivational barrier to citizen participation in policymaking processes: "the belief that government is indifferent to the considered views of the citizenry."[107]

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[103] Farina et al., *supra* note 90, at 1578.
[104] *Id.* at 1580.
[105] *See infra* Part III. This analytic oversight is not limited to the otherwise path-breaking work of Farina and Kong. Recall in Part III above Somin's critique of Ackerman and Fishkin's DELIBERATION DAY as being ultimately dependent on a citizenry so informed as to make such a "Deliberation Day" utterly superfluous. Or consider the intriguing approach of Lerner, who argues that when governments use the principles of game design to design their policymaking processes, public participation becomes more attractive, effective, and transparent. Lerner's argument, however, does not address how the principles of game design might be marshaled to convince governments to deploy the principles of game design to their policymaking processes. *See* JOSH LERNER, MAKING DEMOCRACY FUN: HOW GAME DESIGN CAN EMPOWER CITIZENS AND TRANSFORM POLITICS (2014).
[106] Farina et al., *supra* note 90, at 1564 (*quoting* Arthur Lupia, *Deliberation Disconnected: What it Takes to Improve Civic Competence*, 65 LAW & CONTEMP. PROBS. 133, 143-45 (2002)).
[107] *Id*. at 1565.

Providing a single or comprehensive solution capable of overcoming this intransigent barrier – which is made all the more intransigent given the empirical evidence suggesting that the public's belief may well be true in a disquieting number of policymaking instances – is plainly beyond the scope of this article. There is no silver bullet, no "killer app" capable of neatly resolving this fundamental problem. There is, however, a particularly promising line of research that scholars and practitioners of deliberative democracy and environmental governance would do well to begin to further explore and integrate into their work in order to circumvent the catch-22 dilemma associated with reforming policymaking processes – direct stakeholder empowerment via Photovoice.

Photovoice is a research and advocacy process through which stakeholders can identify, represent, and enhance their communities through a specific photographic and dialogic research technique. As a practice rooted in the production of knowledge, Photovoice has three main goals: (1) enable people to record and reflect their lived and epistemic communities' strengths and concerns; (2) promote critical dialogue and knowledge about important issues through large and small group discussion of photographs; and (3) reach and influence policymakers.[108]

As a participation-action research methodology, Photovoice is premised on the axiom that people are experts on their own lives. First used with village women in the Yunnan Province of China,[109] participants speak about and through the photographs they take in order to raise critical questions, such as: "Why does this situation exist?" "Do we want to change it?" "And if so, how?" By documenting their own worlds through photographs and narratives about those photographs, participant stakeholders can initiate grassroots political change on their own terms.

Epistemologically, Photovoice is founded on a position of feminist theory elegantly described by art historian Griselda Pollock in which "[e]veryone has a specific story, a particular experience of the configurations of class, race, gender,

[108] *See* Caroline C. Wang & Marry Ann Burris, *Photovoice: Concept, Methodology, and Use for Participatory Needs Assessment*, 24 HEALTH EDUC. BEHAV. 369 (1997).
[109] Caroline C. Wang, *Chinese Village Women as Visual Anthropologists: A Participatory Approach to Reaching Policymakers*, 42 SOC. SCI. MED. 1391 (1996).

sexuality, family, country, displacement, alliance…. Those stories are mediated by the forms of representation available in the culture."[110]

Accordingly, Photovoice methodology raises community awareness by expanding the forms of representation and the diversity of voices capable of helping define and improve our social, political, and environmental realities.[111] The Indigenous Health Adaptation to Climate Change (IHACC) Photovoice project in the Canadian Territory of Nunavut neatly exemplifies the accessibility of Photovoice (PV):

> PV was used in IHACC pilot study because it is a method that allows communities to actively engage in research and define priorities. Participants take ownership of the research and have the time to tailor their participation into their daily schedule, recording issues throughout their daily activities. For example, IHACC pilot study participants would take their cameras to their fields and on their fishing boats. Unlike most participatory methodologies, PV does not require long workshops where participants are made to think and reflect on their lives on the spot. PV allows participants to take their time to consider the research questions, think about what they want to communicate to the research team and policy makers, before coming back to the group for discussion. Consequently, PV is a means for the community to talk about issues that might otherwise be left unheard. During pilot research, PV emerged as particularly useful for documenting the importance of traditional medicines and approaches to health, and effective for oral cultures with their focus on narrative, context, stories, and sharing.[112]

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[110] GENERATIONS AND GEOGRAPHIES IN THE VISUAL ARTS (Griselda Pollock, ed. 1996). For a skeptical take on the contemporary trend to communicating more with images than text, see e.g. Catherine Shoard, THE GUARDIAN WEEKLY 48 (July 29-Aug. 4 2006) ("Soon we won't have to worry about plagiarism or mistranslation. Image is growing ever more powerful and people are saying less and less with words.").

[111] Caroline C. Wang et al*., Flint Photovoice: Community Building Among Youths, Adults, and Policymakers*, 94 AM. J. PUB. HEALTH 911 (2004). For a review of the use of Photovoice in research on environmental issues, see Meredith C.F. Powers & Darcy A. Freedman, *Applying a Social Justice Framework to Photovoice Research on Environmental Issues: A Comprehensive Literature Review*, 13 CRITICAL SOC. WORK 80 (2012).

[112] *PhotoVoice*, INDIGENOUS HEALTH ADAPTATION TO CLIMATE CHANGE, http://ihacc.ca/photovoice#pv (last visited June 7, 2018).

Although still very much at a preliminary stage, the EarthCare Climate Adaptation Photovoice Project[113] similarly illustrates the potential of Photovoice to broaden and enhance public participation in environmental governance. Bringing together citizens, local municipal government staff members, and university researchers in public health and education, the EarthCare Photovoice project is part of the efforts of the City of Thunder Bay to develop a sustainability plan and climate change adaptation strategy. Specifically, the goals of the project include (1) using photographs to raise community awareness of climate change, adaptation, and resilience, and (2) documenting potential actions that local citizens and the municipal government can take. Citizen participants are encouraged to think about visualizing and documenting locally-relevant actions and solutions. Because previous survey work has found (unsurprisingly) that most residents are not familiar in any great depth with what "adaptation" and "resilience" mean in the context of climate change, participants are encouraged to use photographs to engage citizens where they live, learn, work, and play in order to illustrate specific actions that citizens and the municipal government can take. Ultimately, the project will culminate in an open house displaying the photographs and their accompanying descriptions, along with a presentation to the City Council for the purposes of informing the City's sustainability and climate change adaptation policymaking. Tellingly, the EarthCare Photovoice project participants intuitively understand the political context within which they are pursuing their goals. As one citizen participant expressed during a preliminary brainstorming workshop focused on selecting the photographs to be featured in the exhibit and presentation, "we need leadership from our municipal policymakers, but to get that, we have to generate enough community awareness and pressure to force the City to act."[114] More telling still was how this political intuition emerged out of the group's discussion of the initial collection of the participants' photographs when one participant noted the relative *absence* of photographs depicting local forms of political action.[115]

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[113] *EarthCare Thunder Bay*, CITY OF THUNDER BAY, http://www.thunderbay.ca/Living/Environment/EarthCare_Thunder_Bay.htm (last visited June 7, 2018). EarthCare Thunder Bay is a partnership between the City of Thunder Bay, located at the head of Lake Superior in the Canadian province of Ontario, local community members, and academic researchers in public health and education to work together on issues of community sustainability, climate adaptation, and greenhouse gas emissions reduction. EarthCare's mission is to lead the community in securing the environmental health of the region, and thereby improve the social, cultural, and economic well-being of future generations.

[114] EarthCare Climate Adaptation Working Group Photovoice Project, Group Dialogue Workshop, Aug. 16, 2016, Thunder Bay, Ontario.

[115] *Id.*

Photovoice methodology is a compelling strategy for enhancing public participation in policymaking in the "wild" that flips the approach of Farina and Kong – embodied in the RegulationRoom and MODS projects – on its head. Whereas their approach argues that "efforts to make public participation processes more deliberative must include ways to present the information people need in forms that they are able and willing to consume," the operative idea behind Photovoice methodology is that citizens' own voices are themselves capable of meaningfully informing and influencing policymaking processes.[116]

Community participation-based research and advocacy operates from the premise, not that the highly technocratic policymaking process must be translated into terms cognizable by ordinary citizens, but that the lived experience of ordinary citizens is itself capable of driving policymaking. Photovoice in particular is a form of stakeholder research and advocacy that starts from citizens' own situated knowledge and expertise – what U.S. President Barack Obama calls the "[k]knowledge [that] is widely dispersed in society[117] – that may be expressed in ways that are difficult for policymakers to ignore.

This is particularly important because overly technocratic policymaking is not only ripe for capture by sophisticated special interests at the expense of ordinary citizens and historically missing stakeholders, but its focus on official expertise, research, and data also tends to obscure the underlying and often tacit normative dimensions of otherwise ostensibly technical policy issues.[118] The displacement of normative debate can have the effect of chilling the participation of affected stakeholders, who tend to be either unaware of the key implications of regulatory debates or simply unable to participate in the debate itself when it is conducted using technocratic discourse and procedures.[119] Governments cannot be relied on to translate technocratic issues and processes into more accessible language, and that task is often too onerous for civil society groups.[120] The better

[116] Farina et al., *supra* note 90, at 1553.
[117] Memorandum from Peter R. Orszag, Dir., Office of Mgmt. & Budget, on the Open Gov't Directive, to the Heads of Exec. Dep'ts & Agencies (Dec. 8, 2009) (on file with the author).
[118] *See e.g.,* Cass R. Sunstein, *Factions, Self-Interest, and the APA: Four Lessons Since 1946*, 72 VA. L. REV. 271 (1986); *See also* Hoi Kong, *The Deliberative City*, 28 WINDSOR Y.B. ACCESS TO JUST. 411, 416-19 (2010).
[119] *See e.g.,* Daniel Carpenter & Gisela Sin, *Political Tragedy and the Emergence of Regulation: The Food, Drug, and Cosmetic Act of 1938*, 21 STUD. AM. POL. DEV. 149 (2007).
[120] As Farina et al. rightly observe, policymaking material "is rarely comprehensible to [laypeople] without help. Often voluminous and filled with technical, legal, or other jargon, such material is virtually always written from the 'inside' perspective of the professional consultant, regulator, or

approach is to mobilize and frame public participation in forms already intimately understood by citizen stakeholders – documented forms of their own expert situated knowledge. As the emerging literature on the use of Photovoice illustrates, this comparatively simplified, community-based practice may be better suited to both broadening and enhancing public participation in policymaking, and is particularly well suited to environmental policymaking.[121]

Finally, simplified, community-based, and stakeholder-centered practices may help to incrementally reform policymaking processes more generally. While it is beyond serious dispute that the policymaking issues – particularly environmental policy issues – confronting modern states are of a super wicked complexity,[122] it does not necessarily follow that policymaking *processes* must themselves also be complex. As Cass Sunstein convincingly argues, "government can be far more effective, far less confusing, far less counterproductive, and far more helpful if it opts, wherever it can, for greater simplicity…. All large institutions, including governments, can do a lot more to make things more automatic and enlist simplicity, seeking to match their products and services *to what people find natural and intuitive*."[123]

V. CONCLUSION

During the University of Minnesota Sea Grant's Upper Great Lakes Law and Policy Symposium on "Managing Water Across Boundaries" held in March 2016, whether the discussion focused on water diversions and water levels, non-native aquatic species, contaminants, climate change, or other emerging issues, a common, cross-cutting theme was the crucial importance of increasing the public's involvement in Great Lakes environmental governance. This article has sought to extend this discussion by situating Great Lakes environmental governance in the larger international environmental law and political context of the "myth" of transboundary pollution prevention – specifically, the failure of subnational and national governments around the Great Lakes to commit to this

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planner—with little effort to present context, problems, constraints, and options in terms that make sense to ordinary people." Farina et al., *supra* note 90, at 1553.

[121] At the same time, however, neither Photovoice nor community-based research and policymaking processes more generally can completely substitute for technical expertise. Further research is required into possible means of integrating community-based knowledge with expert knowledge, which is no mean task.

[122] *See e.g.* Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1159 (2009).

[123] CASS R. SUNSTEIN, SIMPLER: THE FUTURE OF GOVERNMENT 11, 14 (2013).

norm. In particular, this article attempts to illustrate how broader and deeper public participation in Great Lakes governance – and environmental governance more generally – is uniquely capable of compelling relevant levels of government to commit to greater protection of the Great Lakes and thereby begin to unmake the myth of transboundary environmental protection. To that end, this article reviewed the emerging literature on a particularly promising community-based, stakeholder-centered methodology – Photovoice – that empowers stakeholders to engage policymakers and initiate social and political change on their own terms. While nearly every analysis of public participation in policymaking calls for governments to do more to encourage and facilitate the public's involvement, this article breaks with this trend, acknowledging the uncomfortable fact that governments are often either unable or unwilling to meaningfully incorporate the public into its processes. This article suggests instead that civil society groups, and academic researchers in particular, must begin to play a far larger role in bringing important environmental issues and policymaking opportunities to the public's attention, and crafting methodologies that bring more of the concerned public into meaningful and influential dialogue with relevant policymakers. This is a particularly pressing objective for Great Lakes environmental governance in light of the critical lack of baseline data plaguing policymaking in both Canada and the United States. Broader and better public participation in Great Lakes governance may be the key both to spurring responsible governments to act and to assisting in filling this knowledge gap.

THE GREAT LAKES WATER RESOURCES COMPACT AND AGREEMENT: A MODEL FOR TRANSBOUNDARY GOVERNANCE AT SUBNATIONAL SCALES?

Bradley C. Karkkainen[1]

I. Introduction

Coordinated efforts by the United States and Canada to manage the world's largest freshwater system, the Laurentian Great Lakes, are often cited as a model of amicable binational cooperation in transboundary natural resources management. There is much to celebrate in that relationship. The venerable Boundary Waters Treaty[2] (Treaty) is now over 100 years old and still going strong, as is the International Joint Commission (IJC), the independent binational commission established by that treaty[3] to investigate and resolve disputes and keep a watchful, protective eye over the "waters . . . along which the international boundary between the United States and the Dominion of Canada passes,"[4] a definition that includes but is not limited to the Great Lakes.

One of the principal objectives of the Treaty was to guarantee full freedom of navigation and commerce on our "inland seas" and other boundary waters.[5] That objective has been so thoroughly realized that it is now universally taken for granted on both sides of the border, but it is important to remember that this is no minor accomplishment. Another major objective was to establish a process for binational review and approval or disapproval of any "uses or obstructions or diversions" on either side of the border that would materially affect the "natural level or flow of boundary waters." Any such proposals require approval by a majority of the six-member IJC, consisting of three Commissioners appointed by

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[1] Professor and Henry J. Fletcher Chair, University of Minnesota Law School.
[2] Treaty Between the United States and Great Britain Relating to Boundary Waters, and Questions Arising Between the United States and Canada, U.S.-G.B., Jan. 11, 1909, 36 Stat. 2448 [hereinafter Boundary Waters Treaty]. Canada was a Dominion of the British Crown at the time, and British diplomats negotiated the Treaty on Canada's behalf.
[3] *Id.* at art. VII (establishing International Joint Commission) and art. VIII (granting IJC authority to investigate and resolve disputes).
[4] *Id.* at Preliminary Article.
[5] *See id.* at art. I ("The High Contracting Parties agree that the navigation of all navigable boundary waters shall forever continue free and open for the purposes of commerce to the inhabitants and to the ships, vessels, and boats of both countries equally…").

each nation.[6] Here, too, disputes have been few, and mechanisms for resolving those disputes have been effective.

Less frequently noted, the Treaty was also one of the first international agreements–if not the very first–to explicitly address transboundary pollution. In Article IV, the parties agreed that "the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other,"[7] a remarkably forward-looking commitment in a 1909 treaty, and an early expression of what would later become a customary international law norm against serious transboundary environmental harm. Although little was done to implement this commitment over the first five decades under the Treaty, the last 50-plus years have seen the adoption of a series of ambitious Great Lakes Water Quality Agreements (GLWQA), binational executive agreements to maintain and restore water quality and the ecological health of Great Lakes basin ecosystems. Beginning as relatively modest agreements to bring the most common pollutants under control, these agreements have grown increasingly comprehensive and visionary, inter alia being among the first international agreements to adopt an "ecosystem approach" calling for integrated, holistic management of all the resources and stressors that comprise the Great Lakes ecosystem.

In a more recent but equally far-reaching and visionary development, the Great Lakes Water Resources Compact and the Great Lakes-St. Lawrence River Sustainable Water Resources Agreement (collectively Compact and Agreement) commit the eight U.S. Great Lakes Basin states and the two Canadian provinces of Ontario and Quebec to keep Great Lakes basin water in the Great Lakes basin by generally limiting out-of-basin diversions and bulk withdrawals. Some critics would dismiss the Compact and Agreement as crude economic protectionist measures, designed to force people and businesses in an increasingly water-scarce world to come to the Great Lakes, rather than allowing Great Lakes basin water to "flow uphill toward money," as they say in the American West. In truth, you can find some of that protectionist sentiment in the rhetoric surrounding the Compact and Agreement, but ultimately the Compact and Agreement are about more than simple economic self-interest. At their heart, they represent a basin-wide commitment to keep water in place in the Great Lakes and their tributaries, to allow these complex and resource-rich aquatic systems to continue to function as

[6] *See id.* at arts. III & IV (provisions on uses, obstructions, and diversions), art. VII (creating IJC), and art. VIII (granting IJC authority to approve or disapprove uses, obstructions, or diversions materially affecting natural levels and flows of boundary waters).
[7] *Id.* at art. IV.

natural systems, rather than simply allowing them to devolve into a cheap and abundant source of water as an exportable commodity. That is a substantial and striking commitment.

The commitment to conserve Great Lakes basin water *in situ* appears to reflect a genuine basin-wide consensus. Not to say there's unanimity of opinion, necessarily, but the overwhelming weight of opinion at both elite and popular levels in every jurisdiction within the Great Lakes basin seems to be strongly in favor of the goals of the Compact and Agreement—that is, in favor of keeping the water in place, and keeping the Great Lakes intact as functioning natural systems. It's a remarkable thing both that this consensus has been achieved over the far-flung reaches of the region, and that it has been so effectively translated into law and public policy. In part, the consensus has arguably been shaped by the instrument. That is, the Compact and Agreement placed the question squarely on the table, and provided a decisive answer. And once those instruments were out there, it forced people in the Great Lakes basin to reflect, and that reflection led overwhelmingly to a unified response: "Of course, this is what we want!"

But the basin-wide consensus also runs deeper than that. I'm no expert on public opinion, but I am a child of the Great Lakes basin, someone who grew up loving the Lakes and seeing them as a central part of who I am, and what makes the places I love such special places. My sense, through years of interacting with people throughout the region, is that attitude and worldview are widely shared among residents of the Great Lakes basin - not by everyone, of course, but by a great many people. There is throughout the region an interjurisdictional and binational "sense of place" - a strong identification with, and genuine affection for, the Great Lakes as a central and defining feature of our natural world.[8] Travel to the farthest reaches of the region, from Duluth to Thunder Bay to Sault Ste. Marie to Milwaukee to Chicago to Traverse City to Sandusky to the Niagara region to the "cottage country" along Georgian Bay and the eastern reaches of Lake Ontario, and you'll find people with that same sense of place, that identification with the Great Lakes. It is the glue that binds us together in a shared transboundary regional identity. It is also what makes us so passionate, across the basin, about defending "our" Lakes against perceived threats. And that,

[8] Public opinion surveys within the Great Lakes basin consistently show high levels of public support for more aggressive action to protect the Great Lakes. One basin-wide survey found that 96% of respondents agreed that "we need to do more to protect the Great Lakes from pollution" and 86% agreed that "we need to do more to protect Great Lakes habitats from development." BELDEN RUSSONNELLO & STEWART RESEARCH & COMMUNICATIONS, GREAT LAKES: RESPONSIBILITY AND AWARENESS ABOUT A VITAL RESOURCE - SUMMARY ANALYSIS OF PUBLIC OPINION IN THE GREAT LAKES STATES (2003).

ultimately, is the animating spirit that both gave rise to, and found expression in, the Compact and Agreement.

All of that is worth celebrating. But before we get too carried away with celebration, let's remind ourselves that much remains to be done. Keeping water in the Great Lakes basin is just a start. There's still work to be done to ensure good water quality, to make sure the fish in our lakes and streams are both abundant and safe to eat, to halt the spread of invasive species, to clean up contaminated hotspots, to bring nonpoint source runoff under control, to restore degraded aquatic and shoreline ecosystems, to ensure that every household and every child in the Great Lakes Basin has access to safe, health-giving drinking water (because in a region as blessed with abundant and high quality water resources as this one is, it's unconscionable that a Flint could happen, and it must never happen again). Much of that work is ongoing under the auspices of the GLWQA, through the U.S. Environmental Protection Agency (EPA), Environment Canada, and the binational processes established under that agreement.

But even more is needed. Let's be blunt. As much as the basin states and provinces are to be commended for taking the lead in negotiating and implementing the Compact and Agreement, ultimately the states and provinces need to step up and play a much larger and more central role in the entire array of Great Lakes protection issues and challenges, and in ongoing governance on basin-wide scales. In both of our federal systems in the United States and Canada, the states and provinces are critically important players. They hold much of the operational authority to get things done. To be sure, binational commitments like the venerable Treaty and the latest GLWQA are vitally important. But large portions of the policy agenda laid out in those binational agreements ultimately must be implemented, at least in part, through the states and provinces. Problematically, however, the states and provinces don't have ownership over the binational agreements or binational decision-making processes, which are understood to be the responsibility of the respective national governments. So there's a kind of disconnect between our lofty binational policy ambitions on the one hand, and the role of states and provinces as key implementers of those policies on the other hand. And that, I submit, is one of the most important reasons that the truly ambitious and visionary goals and commitments put forward in a series of binational GLWQA have often led to disappointment at the implementation stage.

Against that backdrop, this Article will argue that the Compact and Agreement represent an alternative governance model that could do much to

strengthen institutional arrangements for management of the Great Lakes ecosystem.

II. BACKGROUND: THE GREAT LAKES AND BINATIONAL GOVERNANCE

Straddling the international boundary between the United States and Canada, the Laurentian Great Lakes comprise the world's largest freshwater ecosystem with nearly 20% of the planet's fresh surface water. Covering an area of some 94,000 square miles (245,000 km^2) and with more than 10,000 miles (16,000 km) of coastline, the Great Lakes are the centerpiece of North America's industrial heartland, a major shipping route for both intra-continental and ocean-going carriers, and a priceless aesthetic, recreational, and ecological resource for the region's forty million people.

The Great Lakes are also one of the world's most important shared transboundary freshwater systems, raising complex and difficult issues of transboundary governance. As early as 1909, the United States and Canada acknowledged and sought to address the problem of pollution of shared waters. The Treaty[9] signed in that year is not primarily an environmental agreement. Instead it committed the parties to observe freedom of navigation and commerce in the Great Lakes and other boundary waters;[10] to regulate obstructions, diversions, and artificial elevations or diminutions of natural lake levels;[11] and to resolve management questions and disputes amicably. Toward that end, the Treaty established the IJC, a binational body whose members are appointed by the respective governments, but by tradition act independently of the political and policy preferences of the governments in power.[12] The IJC is empowered to regulate dams, diversions, and obstructions,[13] to investigate and make recommendations to the governments on questions they refer to it ("references"),[14] and to arbitrate disputes between the parties.[15] But the Treaty did

[9] Boundary Waters Treaty, *supra* note 2.
[10] *Id.* at art. I.
[11] *Id.* at art. III (prohibiting uses, obstructions, or diversions that alter natural levels except as authorized by the IJC).
[12] *Id.* at art. VII (creating the IJC composed of six members, three appointed by the President of the United States and three appointed by the British crown on the recommendation of the Governor in Council of Canada).
[13] *Id.* at art. VIII (authorizing the IJC to regulate uses, obstructions, and diversions and setting out a priority of uses to be followed by the IJC)).
[14] *Id.* at art. IX (committing the Parties to refer "questions or differences arising between them" to the IJC, which is empowered to "examine into and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate").

contain one crucial and at the time novel anti-pollution provision. Under Article IV of the Treaty, the parties contract to ensure that "boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other."[16]

As early as 1912, after an alarming rise in typhoid mortality in the Great Lakes region, the parties referred the question of transboundary bacterial pollution in the Great Lakes and certain other boundary waters to the IJC.[17] The reference led to a massive investigation - the largest bacteriological investigation of its kind anywhere in the world up until that date[18] - - which culminated in an IJC recommendation in 1918 that sewage treatment works be installed, especially in communities around the Detroit and Niagara Rivers where bacterial concentrations were highest.[19] The IJC further urged that a single binational authority be established to set effluent standards, and volunteered itself for that role.[20] The governments responded by asking the IJC to draw up a treaty to implement these recommendations, but the governments never acted on the draft treaty.[21] The city of Detroit did complete its first wastewater treatment plant by 1925, but only to a standard of "primary treatment," with the result that Detroit continued to be the principal source of pollution to Lake Erie for the next several decades.[22] Buffalo, the principal source of bacterial pollution to the Niagara River, did not complete a sewage treatment facility until 1938.[23]

For the most part, the anti-pollution provision of the Treaty was honored more in the breach than in the keeping until pollution in the Great Lakes became so severe that by the 1960s urgent necessity forced further action. Acting largely on recommendations drawn up by the IJC under a reference on eutrophication in

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[15] *Id.* at art. X (providing that by mutual consent the Parties may refer "[a]ny questions or matters of difference" to the IJC "for decision" by majority vote of the Commission).
[16] *Id.* at art. IV.
[17] Jennifer Read, *'A Sort of Destiny': The Multi-Jurisdictional Response to Sewage Pollution in the Great Lakes, 1900-1930*, 22 SCIENTIA CANADENSIS 103, 104-05, 117 (1999).
[18] *Id*. at 117.
[19] INT'L JOINT COMM'N, FINAL REP. ON THE POLLUTION OF BOUNDARY WATERS REFERENCE (1918).
[20] *Id*.; *see also* Read, *supra* note 17, at 120.
[21] Read, *supra* note 17, at 122-23 (noting that revised versions of the draft treaty circulated within the two governments right up until the 1929 stock market crash, but reductions in typhoid deaths due to the introduction of chlorinated water treatment had dampened the sense of urgency that prompted the initial IJC reference).
[22] Arnold W. Reitze, Jr., *Wastes, Water, and Wishful Thinking: The Battle of Lake Erie*, 20 CASE W. RES. L. REV. 5, 7-10 & n. 24 (1968).
[23] Mary C. Rossi, *The History of Sewage Treatment in the City of Buffalo, New York*, 28 MIDDLE STATES GEOG. 9, 12 (1995).

Lake Erie, the United States and Canada undertook the first GLWQA in 1972, pledging to "restore and maintain the chemical, physical, and biological integrity" of the Great Lakes by "reduc[ing] to the maximum extent practicable the discharge of pollutants into the Great Lakes system."[24]

For both the United States and Canada, the GLWQA represented the first major foray into modern international environmental law. There had been bilateral, regional, and multilateral agreements on wildlife and other natural resources prior to 1972,[25] and in limited ways pollution control had begun to creep into international law well before the 1970s - for example, through the *Trail Smelter* arbitration[26] and the pollution control provision of the Treaty itself. But the GLWQA represented something new - a binational agreement dedicated exclusively to pollution control in a transboundary setting.[27]

The 1972 GLWQA was primarily a pollution control agreement, albeit an unusually broad one that pledged the parties to "ensure adequate control of all sources of pollutants."[28] Its stated goal was to restore and enhance "water quality in the Great Lakes system" by establishing water quality standards for nutrients, toxic substances, materials that produce colors, odors, or other nuisance-like effects, as well as "floating debris, oil, scum and other floating materials" and "substances that . . . settle to form putrescent or otherwise objectionable sludge deposits."[29] Notwithstanding these broad commitments, however, the principal and most urgent focus in those early years was a narrower one - controlling phosphorus pollution, which had been identified as the main culprit in Lake Erie eutrophication.[30]

As it turned out, the phosphorus problem was substantially and fairly rapidly mitigated through the construction of modern sewage treatment plants in and upstream from the Lake Erie basin, coupled with strict regulatory controls on other major point sources of pollution, implemented on the United States side through the Clean Water Act, which had been enacted roughly

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[24] Great Lakes Water Quality Agreement, U.S.-Can., Apr. 15, 1972, at art. II, T.I.A.S. No. 7312 [hereinafter GLWQA].
[25] *See*, *e.g.*, Convention for the Protection of Migratory Birds, U.S.-Gr. Brit., Aug. 16, 1916, 39 Stat. 1702.
[26] Trail Smelter Case (U.S. v. Can.), 3 R.I.A.A 1905 (1939, 1941), *available at* http://legal.un.org/riaa/cases/vol_III/1905-1982.pdf (last visited July 2, 2018).
[27] LEE BOTTS & PAUL MULDOON, EVOLUTION OF THE GREAT LAKES WATER QUALITY AGREEMENT 27 (2005).
[28] GLWQA of 1972*, supra* note 24, at art. II(c).
[29] *Id.* at arts. II-III.
[30] BOTTS & MULDOON, *supra* note 27.

contemporaneously with the first GLWQA, and on the Canadian side by regulatory requirements promulgated by the province of Ontario - the provinces having primary jurisdiction over pollution control under Canadian law. The parties soon recognized, however, that more was amiss in the Great Lakes ecosystem than excessive phosphorus inputs. Research conducted primarily in the 1970s pointed to new problems - the persistence of concentrated "hotspots" of toxic contaminants in sediments on the lake bed, especially in ports and near industrial outfalls; the buildup of bioaccumulative toxics in the flesh of fish and other aquatic life; airborne deposition of pollutants, not controlled by the new water pollution control laws; and the contributions of non-point pollution sources along the shores of the Great Lakes and far inland along their tributaries.[31]

The 1972 GLWQA also set in motion processes that mounted pressure for its own change. By the terms of the 1972 GLWQA, the IJC was to issue periodic reports on progress toward meeting the agreement's water quality objectives and to make recommendations to the governments,[32] building on the IJC's traditional role as an independent and impartial adviser to the governments and partially transforming it into an independent "watchdog" in the pollution control arena. The original GLWQA also committed the governments to undertake a five-year review of the agreement's effectiveness with an eye toward making such revisions as would be necessary[33] - thus launching a dynamic, iterative, rolling review and revision process, not only of the agreement's overall goals and objectives but also of the management approaches and institutional arrangements that might be necessary to achieve environmental improvements. Finally, among the institutional arrangements that emerged out of the 1972 GLWQA were several that dramatically opened the process to citizen participation, creating additional pressure on the governments to address these broader problems.[34]

In 1978 a revised GLWQA[35] was signed, committing the parties to an "ecosystem approach" to integrated management of the entire suite of

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[31] *Id.*

[32] GLWQA of 1972, *supra* note 24, at art. VI, par. 3 (mandating the IJC to report to the governments on progress toward meeting water quality objectives, assessing effectiveness of programs and measures, and offering its recommendations). *See also id.* at art. IX, par. 1 (mandating that the Parties consult on IJC reports and recommendations submitted under art. VI and that they consider modifications of water quality objectives, programs and measures, and the Agreement, as appropriate).

[33] *Id.* at art. IX, par. 3 (mandating that the Parties conduct "comprehensive review" of the Agreement at five year intervals).

[34] *See* BOTTS & MULDOON, supra note 27.

[35] Great Lakes Water Quality Agreement of 1978, U.S.-Can. , Nov. 22, 1978, 30 U.S.T. 1383 [hereinafter GLWQA of 1978].

environmental stressors and natural resources that made up the Great Lakes Basin Ecosystem, defined in the 1978 GLWQA to include "the interacting components of air, land, water and living organisms, including humans, within the drainage basin of [the international portion of] the St. Lawrence River."[36] The 1978 GLWQA was the first anywhere to embrace the ecosystem approach - - an approach that subsequently has been widely emulated elsewhere.[37]

The broad ecosystem restoration goals enunciated in the revised 1978 GLWQA were largely kept intact when a new 1987 Protocol was negotiated,[38] and these goals remain foundational to the Great Lakes management regime today. But the 1987 Protocol added several important wrinkles. First, in recognition of the important role of airborne deposition of pollutants, air pollution control was explicitly added to the GLWQA's list of objectives.[39] Second, while maintaining overall basin-wide ecosystem restoration goals, the parties committed to develop Remedial Action Plans for identified "areas of concern" (toxic hotspots) throughout the Great Lakes Basin, and launched a process to develop management plans at the level of the individual lakes.[40] The 1987 Protocol thus incorporated an innovative "nested" management scheme at multiple interconnected scales, yet another important innovation and one more significant evolutionary step in the dynamic, iterative unfolding of Great Lakes governance.[41]

A 2012 Protocol makes additional commitments.[42] It expressly recognizes aquatic invasive species, discharges from ships, climate change, and habitat and species loss as priority concerns, and places special emphasis on restoration and maintenance of nearshore areas, where stressors tend to be greatest. The

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[36] *Id.* at art. I(g). By encompassing the entire Great Lakes basin, the GLWQA thus embraces a much larger geographic scope than the Boundary Waters Treaty, which by its terms encompasses the waters "from main shore to main shore" including "bays, arms and inlets thereof" but excluding "tributary waters" and "waters flowing from such lakes, rivers, and waterways."

[37] *See* Thomas Martin, *Great Lakes Water Quality Initiative*, 14 NAT. RES. & ENV'T. 15, 16 (1999) (stating that the 1978 Great Lakes Water Quality Agreement was "the first time that a major regulatory agreement has specifically adopted an 'ecosystem' approach").

[38] Protocol Amending the Agreement of November 22, 1978, U.S.-Can., Nov. 18, 1987, T.I.A.S. No. 11551 [hereinafter 1987 Protocol].

[39] *Id.* at annex 15 (committing the Parties to research, surveillance, monitoring, and control measures on airborne toxic pollutants)

[40] *Id.* at annex 2 (committing the Parties to undertake Remedial Action Plans for designated Areas of Concern, and to develop and implement Lakewide Management Plans for each of the Great Lakes).

[41] Henry A. Regier, *Great Lakes-St. Lawrence River Basin Assessments: Case Study*, in BIOREGIONAL ASSESSMENTS: SCI. AT THE CROSSROADS OF MGMT. & POL'Y 135, 138 (1999).

[42] Protocol Amending the Agreement on Great Lakes Water Quality, Can.-U.S., Sept. 7, 2012, T.I.A.S. 13-212 [hereinafter 2012 Protocol].

governments pledge to adopt common objectives and to implement cooperative programs, and to involve key subnational actors including states, provinces, municipalities, Tribal Governments, First Nations, watershed management agencies, and the public in Great Lakes management and restoration. The parties promise heightened transparency and accountability through adoption of specific objectives for each lake and at basinwide scales, coupled with enhanced monitoring and reporting requirements. They pledge to use an adaptive management approach. The Protocol contemplates an enhanced role for the IJC and its subsidiary bodies, including the Great Lakes Water Quality Board, Science Advisory Board, and Great Lakes Regional Office, though the IJC's role remains largely one of information-gathering and advising. Indeed, the Protocol underscores that operational responsibility for implementation of all these commitments remains the sole responsibility of the national governments; both the IJC and subnational actors are relegated to an advisory and consultative role.[43]

In important ways, then, both the Treaty and the GLWQA through its multiple iterations and amendments[44] have been pathbreaking agreements, establishing a model of successful transboundary cooperation in the management of a critically important shared watercourse - and to that extent, a worthy benchmark for the rest of the world.[45] They have also been progenitors of much of modern international environmental law - the first to articulate the principle

[43] *Id.* at art. 3.2 ("The Parties shall progress to the attainment of these General Objectives, Lake Ecosystem Objectives, and Substance Objectives through their respective domestic programs"); *Id.* at art. 4 ("The Parties, *in cooperation and consultation with* State and Provincial Governments, Tribal Governments, First Nations, Métis, Municipal Governments, watershed management agencies, other local public agencies, and the Public, shall develop and implements programs and other measures … .") (emphasis added).

[44] *See* Revised Great Lakes Water Quality Agreement of 1978, U.S.-Can., Nov. 22, 1978, 30 U.S.T. 3083; Phosphorus Load Reduction Supplement to Annex 3, U.S-Can., as amended by Protocol, Nov. 18, 1987, T.I.A.S. No. 11,551. The GLWQA is not a formal treaty requiring Senate approval, but rather an executive agreement. *See* DAVE DEMPSEY, RUIN & RECOVERY: MICHIGAN'S RISE AS A CONSERVATION LEADER 251 (2001) (hereinafter DEMPSEY). Executive agreements are nonetheless considered binding as a matter of both international and U.S. law. *See* Jack L. Goldsmith & Eric A. Posner, *International Agreements: A Rational Choice Approach*, 55 VA. J. INTL. L. 113, 123 (2004) ("Under international law and U.S. constitutional law, an executive agreement made on the president's authority alone, without legislative participation, can be legally binding.").

[45] *See*, *e.g.*, Nicholas A. Robinson, *Befogged Vision: International Environmental Governance a Decade After Rio*, 27 WM & MARY ENVTL. L. & POL'Y REV. 299, 360 (2002) (characterizing the GLWQA as an "effective illustration" of "regional integration of environmental protection systems"); DAVID HUNTER ET AL., INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 809 (2d ed. 2002) (characterizing the Great Lakes management effort as "[o]ne of the most widely respected transboundary freshwater management initiatives.").

against transboundary harm by pollution, the first comprehensive free-standing transboundary pollution control agreement, and the first to adopt an ecosystem approach.

Yet for all that, the Great Lakes remain a deeply troubled system, hanging in a delicate balance between collapse and recovery.[46] Even as progress is made in some areas, new crises emerge. To be sure, there has been substantial progress on some fronts. Overall Great Lakes water quality has improved since the 1960s when Lake Erie was proclaimed "dead" and some of the other lakes were thought to be not far behind.[47] We no longer dump raw sewage into the Great Lakes or their tributaries[48] - at least, not usually.[49] Water pollution from industrial point sources has been brought substantially under control.[50] The populations of some species have stabilized, and may be making a comeback in some parts of the Great Lakes system where they had been all but locally extirpated.[51]

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[46] *See*, *e.g.*, JACK BAILS ET AL., NAT'L WILDLIFE FED'N, PRESCRIPTION FOR GREAT LAKES ECOSYSTEM PROTECTION AND RESTORATION: AVOIDING THE TIPPING POINT OF IRREVERSIBLE CHANGES (2005) (assessment by leading Great Lakes scientists calling for urgent action to avoid an ecological "tipping point" due to toxic contamination, nutrient loading, land use changes, hydrologic modifications, and biological change that could result in irreversible ecosystem breakdowns).

[47] *See* DEMPSEY, *supra* note 44, at 248-49 (stating that *Life* magazine declared Lake Erie "dead" in the 1960s and *Newsweek* announced a "death watch" for Lake Michigan in 1969).

[48] *See* DAVE DEMPSEY, ON THE BRINK: THE GREAT LAKES IN THE 21ST CENTURY 113-15 (2004) (describing how raw sewage entered the Great Lakes in the 1960s); William L. Andreen, *Water Quality Today - Has the Clean Water Act Been a Success?*, 55 ALA. L. REV. 537, 580 (2004) (stating that the U.S. and Canada have reduced phosphorus loads in the Great Lakes by 50% through municipal wastewater treatment, industrial point source pollution controls, and restrictions on the use of phosphates in detergents).

[49] *See* Editorial, *Stop the Sewage-Report Shows Need for Stanching Overflows in Great Lakes; Grand Rapids Points the Way*, GRAND RAPIDS PRESS, Dec. 6, 2006, at A12 (editorial stating that twenty-four billion gallons of untreated effluent are released into the Great Lakes each year through sewage spills and combined sewer overflows).

[50] *See* INTN'L JOINT COMM'N, 11TH BIENNIAL REPORT: GREAT LAKES WATER QUALITY: THE CHALLENGE TO RESTORE AND PROTECT THE LARGEST BODY OF FRESHWATER IN THE WORLD 21 (2002) ("Since the signing of the Great Lakes Water Quality Agreement, the governments have taken action to curb chemical inputs, particularly from industrial point sources discharging directly into the lakes. The lakes responded … .").

[51] *See*, *e.g.*, Pat Currie, *Great Lakes "Legend" Makes a Comeback: After Nearly Disappearing, Sturgeon Thriving, Species Has Been Around for 130 Million Years*, TORONTO STAR, Feb. 22, 2005, at A17 (reporting increased populations of lake sturgeon in southern Lake Huron, western Lake Erie, and the Detroit and St. Clair Rivers). Other important species like lake trout and lake herring are reportedly coming back in Lakes Superior and Huron. ENV'T CANADA & U.S. ENVTL. PROT. AGENCY, GREAT LAKES PROGRAM OFFICE, OUR GREAT LAKES 6, 14 (2004).

And certainly our scientific understanding of the ecology, hydrology, and biogeochemistry of the Great Lakes system is better than it ever has been, thanks to the tireless efforts of independent scientists, academic institutions, nongovernmental organizations, and government agencies at both the federal and state/provincial levels on both sides of the border, and to the cumulative, progressive nature of scientific advance itself.

Yet despite all that, the grand binational project of Great Lakes restoration sometimes appears to be on a treadmill. Among the major problems that remain:

- The most severely contaminated toxic "hotspots" have been identified and designated as "Areas of Concern" meriting priority remediation, but only a handful of those clean-ups have been completed and progress has stalled on most of the rest.[52]

- Non-point source water pollution continues largely unabated and in some areas appears to be growing worse, resulting in excess nutrient loads.[53]

- Notwithstanding the adoption of a Binational Toxics Strategy, the governments have made little headway against airborne deposition of both toxic and conventional pollutants.[54]

- There is no real strategy for managing land use within the basin so as to protect the Great Lakes and their tributaries.[55]

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[52] *See* The Right Hon. Herb Gray, *Proceedings of the Canda-United States Law Institute Conference on Understanding Each Other Across the Largest Undefended Border in History*, 31 CAN.-U.S. L.J. 287, 294-95 (2005) (stating that pursuant to the 1987 Protocol, the United States and Canada had identified forty-three "Areas of Concern" or contaminated "hotspots" for priority remedial action, but to date only two have been fully cleaned up).

[53] ENVTL. PROT. AGENCY, GREAT LAKES ECOSYSTEM REPORT 2000 37 (2000) (stating that EPA considers non-point source run-off "the most important remaining source of pollution" in the Great Lakes basin).

[54] *See* Andreen, *supra* note 48, at 581 (stating that atmospheric deposition is now the principal source of mercury pollution and a leading source of other toxic pollutants entering the Great Lakes).

[55] *See* INT'L JOINT COMM'N, PRIORITIES 2001-2003: PRIORITIES AND PROGRESS UNDER THE GREAT LAKES WATER QUALITY AGREEMENT 75-84 (2003) (concluding that sprawling patterns of urban growth in the Great Lakes basin are adversely affecting water quality, and that such cumulative regional environmental impacts are typically given little consideration in local land use planning decisions).

- Invasive species carried in by ships' ballast or infiltrating through rivers and canals continue to wreak ecological havoc, displacing native species and disrupting the food webs and ecological relationships that define aquatic life in the Great Lakes.[56]

Not only are these problems real, severe, and persistent, but the legal and institutional mechanisms capable of addressing them are for the most part not yet in place.

So we have an apparent paradox - or at least a curious juxtaposition of seemingly incompatible facts. One the one hand, we have what is fairly described as one of the most successful and durable models of binational cooperation through international law in transboundary natural resource management the world has ever seen. Those legal arrangements are bolstered by a genuine political will on both sides of the border (at least within the Great Lakes basin) to commit real resources toward the project of protecting and restoring the Great Lakes.[57] Juxtaposed against that, however, we have a picture of widespread and really quite severe failure at the level of substantive policy, amidst a general sense of legal and institutional inadequacy and ineptitude.

III. SCALE MISMATCHES AND THE COMPACT-AGREEMENT SOLUTION

At its core, the problem in Great Lakes governance is that the binational institutions are mismatched to the nature and scale of the problems to be addressed in the Great Lakes basin.[58] The United States and Canada were quick to recognize that neither could manage the Great Lakes alone, and that therefore

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[56] *See* INT'L JOINT COMM'N GREAT LAKES WATER QUALITY BD., ALIEN INVASIVE SPECIES AND BIOLOGICAL POLLUTION OF THE GREAT LAKES ECOSYSTEM 4-5 (2001) (stating that at least 160 non-indigenous species have become established in the Great Lakes including the zebra mussel which clogs water intakes and displaces indigenous mussels, the Eurasian ruffe and round goby, exotic fish that feed on the eggs of native fish and compete with native species for food, and the fishhook water flea, a zooplankton that eats native plankton, disrupting aquatic food supplies); *Id*. at 16-20 (recommending additional measures to control introduction of alien invasive species by regulating ballast water discharges).

[57] Public opinion surveys within the Great Lakes basin consistently show high levels of public support for more aggressive action to protect the Great Lakes. One basin-wide survey found that 96% of respondents agreed that "we need to do more to protect the Great Lakes from pollution" and 86% agreed that "we need to do more to protect Great Lakes habitats from development." BELDEN RUSSONNELLO & STEWART RESEARCH & COMMUNICATIONS, *supra* note 8.

[58] *See* Bradley C. Karkkainen, *Managing Transbonudary Aquatic Ecosystems: Lessons from the Great Lakes*, 19 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 209, 220-27 (2006) (describing subject, scale, and capacity mismatches in transboundary natural resources management).

some level of transboundary cooperation and coordination was essential. So they established a binational Treaty, and later a series of bilateral GLWQA spelling out an innovative vision of integrated ecosystem management and an ambitious set of environmental objectives. But they left implementation of those objectives to their own good offices, each on its own side of the international boundary. While there has been some rearranging of the institutional deck furniture on both sides of the border, the regime for management of the Great Lakes essentially reverts at the implementation phase to the traditional assumptions of Westphalian public international law: the GLWQA is an agreement between national sovereigns, that is to say between the respective federal governments of the United States and Canada, which remain the only real players. Their obligations run to each other, and each is exclusively responsible for implementing the agreement within its own territory. The failure, then, is widely seen as a failure of implementation at the national level, borne of a failure of each party to hold its own and its counterpart's feet to the fire.

Yet closer examination suggests the failure runs deeper than a failure of implementation. An institutional arrangement in which the only two relevant players are the federal governments of the United States and Canada is arguably a flawed institutional design - however consonant that approach may be with the standard assumptions of public international law. That analysis suggests that until the transboundary governance institutions are realigned and, where necessary, redesigned into a new institutional architecture better fitted to the scope and nature of the task at hand, pouring more money through the same old institutional funnels may not get us all that much closer to providing effective solutions. Perhaps it is time to shift our focus away from thinking of management of the Great Lakes as an inter-*national* problem requiring an *inter*-national law solution - a binding contractual agreement between sovereign nation states. Instead, we might think of it as a transboundary problem, requiring a new form of effective transboundary governance, scaled to the resource we are trying to manage and protect.

Strictly binational solutions are predicated upon, and further entrench, a basic disconnect on the question of scale. Even for very large natural systems like the Great Lakes, natural resource management issues will always be seen as essentially regional issues by national-level decision-makers. As a consequence, they'll naturally be a lower priority on the national policy agenda than issues that are perceived to be national in scope.

To be sure, there's also a similar kind of scale mismatch at the state level. With the singular exception of Michigan, most of the Great Lakes states have

most of their land and half or more of their population outside the Great Lakes basin, so that Great Lakes issues tend to be seen as "regional" issues even within states like Ohio and Indiana, much less those like Pennsylvania and New York whose populations overwhelmingly reside outside the basin. Generally speaking, however, states and provinces are "closer to the ground" than the national governments. Issues like the possible loss of Great Lakes water, or threats to the quality of public drinking water supplies, or the decline of fisheries, or the quality of the Great Lakes as an aesthetic, recreational, and tourism-generating resource, have more immediacy and salience at that level, and the constituencies who care about Great Lakes-specific issues tend to have proportionally greater influence at more localized state and provincial scales than at the national level.

Yet acting alone, each of the Great Lakes states and provinces has only a limited capacity to affect conditions in and on the Great Lakes. That, perhaps more than any other factor, has led to a history of passivity and inaction at the state and provincial level.

Here's where the Compact and Agreement represent a potentially critical breakthrough, suggesting alternative institutional possibilities in the Great Lakes basin. They represent a blueprint and model for concerted state and provincial action - legally binding, transboundary, but subnational policy harmonization across jurisdictions, coupled with the establishment of regional-scale institutions vested with real decision-making authority that each of the jurisdictions is bound to respect, all pitched to the scale of the resource we are trying to protect.

The Compact and Agreement are water allocation instruments, aimed at the rather modest goal of limiting out-of-basin diversions of water from the Great Lakes Basin. More specifically, the legally binding Compact among the eight Great Lakes Basin states, and its mirror-image companion document, the good-faith Agreement between the same eight states and two Canadian provinces, provide for:

- A ban on new out-of-basin diversions, subject to narrowly limited exceptions for "straddling" communities that are partly within the basin and partly outside it and for certain intra-basin transfers (e.g., a diversion from the watershed of one Great Lake to the watershed of another Great Lake is permissable).

- Establishment of uniform regional standards for evaluating and permitting proposed water withdrawals, including requirements that return flows shall be to the source watershed, no individual or cumulative adverse impacts on water quality or quantity

shall be permitted, all withdrawals and consumptive uses must be implemented so as to incorporate environmentally sound and economically feasible water conservation measures, and each permitted withdrawal or consumptive use shall be "reasonable" as determined by reference to a multi-factor balancing test set out in the Compact and Agreement.

- Requirements that each state (and province) develop a comprehensive water resources inventory and contribute to a common database on water resources and withdrawals; adopt a state or provincial water management conservation and efficiency plan and submit it for regional review; establish a program to regulate water withdrawals and diversions in accordance with basin-wide standards set forth in the Compact and Agreement; and report at five year intervals on how the Compact and Agreement are being implemented in each respective jurisdiction.

- Establishment of a regional governing body called the Great Lakes Water Resources Council, consisting of the governors of each of the states (or their representatives), and a parallel body called the Regional Body consisting of the governors and the premiers of the two provinces. The Council and Regional Body meet concurrently and are jointly empowered to promulgate and enforce basin-wide regulations; to develop and implement region-wide water management conservation and efficiency plans; to review the water management plans and implementation reports of the basin states and provinces; to make recommendations to the states and provinces regarding implementation of the Compact and Agreement; and to exercise "regional review" permitting authority over proposed withdrawals or diversions deemed to be of region-wide significance or of precedent-setting character.

The Compact and Agreement apply not only to water within the Great Lakes and St. Lawrence River proper, but to all surface and groundwater within the basin. In a controversial compromise, the Compact and Agreement classify shipments of water out of the basin in containers smaller than 5.7 gallons as not constituting "diversions." Also exempted is the longstanding diversion at

Chicago, which is governed by the United States Supreme Court's decree in *Wisconsin v. Illinois*.[59]

Some critics within the Great Lakes basin question whether the instruments will be effective in achieving their stated goal.[60] Other critics question the goal itself, arguing that locking up 20% of the world's fresh surface water at a time of growing water shortages and an uncertain water future in the age of global climate change is a dubious undertaking.[61] Still others have suggested that the Compact and Agreement were put forth as a solution to a remote and speculative, or even non-existent, problem.[62] These critiques raise important questions about the Compact and Agreement that are beyond the scope of this paper.

The focus here is not on the effectiveness of the Compact and Agreement themselves, however; nor on the wisdom of what these instruments are trying to achieve. Instead, the focus is on what the Compact and Agreement represent as a novel kind of transboundary governance mechanism in federal systems. They provide a model in which the states and provinces did not wait for the national governments to act. Nor did the states and provinces assume that because questions of Great Lakes water allocation had a transboundary dimension, decisions about their management properly fell within the exclusive foreign affairs powers of their respective national governments, to be treated as questions of international diplomacy and international law, and thus the exclusive domain of national sovereigns and, according to classical Westphalian theory, no place for subnational actors. Instead, the states and provinces seized the initiative and crafted their own solution - a Compact among the eight states that became legally binding by virtue of Congressional approval, and a legally non-binding but

[59] Wisconsin v. Illinois, 281 U.S. 696 (1930) (limiting diversion at the Chicago Drainage Canal to an average of 1,500 cubic feet per second (c.f.s.) after December 31, 1938, and larger amounts during a transition period).

[60] *See* Mark Squillace, *Rethinking the Great Lakes Compact*, MICH. ST. L. REV. 1347, 1358-60 (2006) (arguing that the Compact focuses exclusively on new or increased withdrawals and diversions without addressing existing water uses in the basin, which are much larger and more significant); Amanda Paterka, *'Jury Is Out' on Implementation of Landmark Great Lakes Compact*, N.Y. TIMES, https://archive.nytimes.com/www.nytimes.com/gwire/2011/07/14/14greenwire-jury-is-out-on-implementation-of-landmark-grea-33525.html?pagewanted=all (describing environmentalist critiques of state implementation of the compact) (last visited Aug. 2, 2018).

[61] *See* Squillace, *supra* note 60, at 1363-64 (questioning the ban on small-scale out-of-basin diversions that cause no perceptible harm to the Great Lakes but may force out-of-basin communities in smaller watersheds to place greater demands on already stressed water resources).

[62] *See* A. Dan Tarlock, *Four Challenges for International Water Law*, 23 TUL. ENVTL. L.J. 369, 391 (2010) (stating that the Compact and Agreement were a response to "remote or trivially possible transbasin diversion threats").

morally compelling parallel good-faith Agreement between the eight U.S. states and two provinces, committing the two Canadian provinces to the exact same provisions to which the U.S. states are legally bound by the Compact, and giving the provinces an equal seat at the table alongside the states in the regional governing body created by the instruments. The Compact and Agreement are then given further legal and practical effect by legislative ratification in each state and province, coupled with implementing legislation in each state and province to put the procedural and substantive commitments called for in the Compact and Agreement into effect. Through this ingenious device, the effect of the Compact and Agreement is to create an actual transboundary governance regime, complete with real transboundary decision-making institutions and backed by the force of law in each of the states and provinces with a stake in the resource, each harmonizing its domestic laws with the common transboundary regulatory scheme.

That all this could take place without a sovereign-to-sovereign international treaty specifically authorizing it might seem remarkable. And so it is, but it gives us a sense of the possibilities. These transboundary governance arrangements do not fit the familiar contours of international law and international lawmaking. Yet neither are they unlawful, nor completely extra-lawful. Indeed, on the United States side at least, they come now with the formal blessing of the federal government, in the form of Congressional ratification of the Compact and acquiescence by silence with respect to the Agreement. It suggests there is space for more of this sort of thing, even in the Great Lakes basin where similar institutional arrangements addressing fully integrated management of the shared water resources is a tantalizing conceptual possibility, albeit not on anyone's policy agenda at the present time.

Ultimately, then, the greatest significance of the Compact and Agreement may lie not in the substantive terms of those agreements, but in the governance model they represent. That model empowers the states and provinces by allowing them to act in concert, making their efforts so much more powerful and effective than if any of them were to act alone. And it also empowers the states and provinces in another sense, by enabling them to act at regional, resource-appropriate transboundary scales, without waiting for policy direction from Washington or Ottawa. This is truly a remarkable breakthrough.

There is a powerful tendency in international law and the practice of international diplomacy to see every transboundary problem as an inter-*national* problem - or in the case of the Great Lakes, a *binational* problem. If there's a transboundary dimension, another nation must be involved, and that brings the

matter within the scope of the foreign affairs power, which in turn places it exclusively within the jurisdiction of the national sovereigns. That is the spirit that brought us the Treaty, the IJC, and the GLWQA between Washington and Ottawa. That is not just a Great Lakes phenomenon, of course; it is standard operating procedure in international law and international diplomacy.

The Compact and Agreement represent a striking alternative to that conventional way of thinking. They say, in effect, "Wait a minute. There are important state and provincial interests here as well, and maybe not everything needs to be decided at the binational level. Maybe we can get the states and provinces to work together, to make some common commitments, to adopt common policies and standards, to harmonize their approaches across all jurisdictions within the basin, and to create effective, ongoing regional bodies to make decisions and ensure that the basin-wide commitments are implemented and enforced, with those regional bodies owned and operated by the states and provinces, not by the national sovereigns."

That's a powerful idea, and a potentially powerful governance structure. It is also a powerful alternative to - and fundamentally a challenge to - the conventional binational way of doing business. In other published papers I have tried to give it fancy names - "post-sovereign governance" or "transboundary normativity without international law." But call it what you will, it is potentially a powerful alternative way of addressing transboundary natural resource management challenges.

Now imagine applying that model to other problems facing the Great Lakes basin. I am not suggesting that the Compact and Agreement themselves should "morph" into multi-issue agreements. That is unlikely, and perhaps even undesirable; they have got enough work to do as it is, and there is some chance they could break apart if they are asked to do too much. But one can imagine parallel sets of commitments on matters like land-based nonpoint source pollution, or shoreline protection standards, or cumulative environmental impact assessment on proposed developments of basin-wide impact. These are critically important matters the national governments of the United States and Canada are unlikely ever to touch, and arguably do not have the jurisdiction to address, but nonetheless are of critical importance to the future of the Great Lakes. These are matters the states and provinces potentially could step forward to address collectively, and in an effective, coordinated way, through additional interstate compacts and parallel transboundary state-provincial agreements.

Nor do I mean to suggest that state-provincial agreements on the model of the Compact and Agreement should wholly supplant or displace binational efforts.

Binational and national efforts - especially efforts to harness up the disparate resources and authorities of various U.S. federal agencies, and to get them working toward common purposes in Great Lakes restoration - are, and will remain, critically important.

But much more is needed. The states and provinces must step forward as full participants and players, not merely as subsidiary implementers of national or binational policy agendas, and not merely as junior consultative partners in a binational decision-making process, but as decision-makers, authors, and implementers of policy in their own right. So my modest proposal is that we look at the Compact and Agreement not only as an important step toward keeping Great Lakes basin water in the Great Lakes basin and keeping the Great Lakes functioning as natural systems, but as a possible model and blueprint for institutional vehicles by which that heightened role for state and provincial participation in and ownership of Great Lakes protection and restoration efforts might come to fruition.

REGULATIONS OR PROTECTIONS: WHAT'S IN A WORD?

Lana Pollack[1]

Thank you for including me in this symposium. I am honored to participate in discussions which include people with such exceptional knowledge and diverse experience.[2]

The International Joint Commission (IJC), created under the Boundary Waters Treaty of 1909 (Treaty), is charged with helping the United States and Canada avoid and resolve disputes between the two countries. Although the Treaty largely focuses on the levels and flow of waters that cross the international boundary, it also stipulates that neither country should pollute waters that would cause injury to the health or property of the other. The more recent Great Lakes Water Quality Agreement (Agreement) substantially expands on that early pollution prevention language, prompting a great deal of the IJC's current attention to be focused on pollution prevention and the cleanup and ecological health of the Great Lakes. The IJC does not have enforcement authority under either the Treaty or the Agreement. However, recommendations in the IJC's science based reports have led to passage of important environmental laws in both Canada and the United States.

The IJC is charged with balancing the needs of a number of identified water uses, which the Treaty explicitly enumerates as domestic and sanitary purposes, navigation, hydropower and irrigation. Over the years the Treaty also has been interpreted to include recognition of environmental, industrial, recreational, and riparian interests. In considering its decisions before issuing operating orders on cross border dams (with the concurrence of both Governments), the IJC is required to give all interested parties an opportunity to be heard. The IJC's ambitious scientific studies and long discussions invariably lead to recognition that in providing for protection of one interest, another may be inconvenienced or more seriously impacted. Frequently the obvious recommendation required for a balanced outcome will lead the IJC to recommend

[1] Chair, U.S. Section of the International Joint Commission, Washington, DC.
[2] This article is based on the author's keynote remarks at the Upper Great Lakes Law and Policy Symposium.

a regulation it sees as essential to protect the waters and ensure the most fair and balanced outcome.

The IJC recognizes that its science-based policy recommendations frequently lead to contentious public and political discussions about whether protections should be crafted into enforceable laws, or restricted to informed voluntary programs, sometimes referred to as best management practices (BMPs). History demonstrates that any call for additional enforceable standards will trigger charges of overregulation. Especially in recent years, those advocating anything more than a voluntary program, and proposing enforceable standards rather than aspirational goals, will usually find themselves in a defensive position. Whether or not legislation designed to protect the environment is passed into law depends substantially on how the debate and discussions are framed.

When proposals are deemed as something that will "regulate business," or as "another regulation," it has a slim chance of being passed into law. On the other hand, when a proposal is successfully framed and discussed as a "public health protection," a "child health protection," or "an essential protection" it has a substantially better chance of being passed into law. Words count, language matters. And while environmental advocates know this, they still often find themselves defending proposals that are framed as burdensome business regulations rather than as essential protections of water, air, or public health.

The shift to language that puts environmental and public health advocates on the defensive goes well beyond the regulations-are-bad and protections-are-good framing. There also has been an impactful shift away from referring respectfully to government officials as "public servants." The more common language today is the use of the more pejorative term "government bureaucrats." Interests generally hostile to additional environmental laws have been successful in changing the public discourse over the last three decades so that now "working for the government" makes one a bureaucrat instead of a public servant. Eliminating bureaucrats makes for a better campaign promise than eliminating public servants. And a campaign message that "We have too many regulations on business" is more attractive than "We have too many protections for safe drinking water."

It's not too late to reframe the political debates on environmental and public health issues. With better language choices, environmental and public health protections can be understood as what they are meant to be, protections. Nor is it too late to reframe the discussions on the role of government and the

people who serve in it. Those who are charged with enforcement, the people we now commonly refer to as regulators or bureaucrats, could just as well be recast as public servants or technical experts committed to protecting the environment and public health. Reframing the reasons for protections and the value of the people who support those protections would make a substantial difference in explaining their value to the public and politicians alike.

When I entered the political arena in the early 1970's there was substantial public demand for better environmental protections. The environmental movement of that day was fueled by burning rivers and other obvious environmental catastrophes, as well as (in the United States) energy of a broad social revolution which had been demanding reforms in civil rights, women's rights, and the end to an increasingly unpopular war. The dominant assumption of the public debates of that day was that at least on domestic issues, the government was an essential vehicle for correcting social and environmental failures.

When I was first elected to the Michigan Senate in the early 1980's, I learned how dependent I would be on the expertise of civil servants who had deep expertise in several fields. I realized that without substantial unbiased professional assistance I couldn't possibly know all I needed to sponsor new legislation or to cast informed votes on the broad sweep of issues that came before the Senate. I also quickly recognized the respect in which the Michigan Department of Natural Resources (DNR) was held, at home in Michigan and among other conservation departments nationally. The DNR at that time was responsible for conservation of Michigan's vast public lands, as well as for the environmental issues that have since been split off to a newer Department of Environmental Quality (DEQ). At that time public servants were reasonably well paid, recognized as professionals, and attracted talented, young graduates with a commitment to protecting and cleaning up the Great Lakes. But much has changed.

Splitting the DNR into two departments made it easier to undermine and underfund the "regulatory" (or protective) responsibilities assigned to the new DEQ. The new department was a convenient whipping boy, a target of those who argued that the loss of jobs in the old industrial states were due to the regulations that were most closely identified as being the work of the DEQ. (It would have been harder to castigate the DNR, as that department was so closely identified with Michigan's beloved state parks.)

The shift of responsibilities from a respected DNR to a disliked DEQ is but one factor in the development of the preventable water disaster that has beset

over 100,000 residents of Flint, Michigan. There were other social, political, and economic reasons that led to the poisoning of Flint's population through their drinking water.

As a city that had lost a substantial part of its auto industry tax base, Flint did not have tax revenue to meet the rising costs of water it was purchasing from the Detroit system. For their part, Detroit had also lost much of its tax base and needed to capture the true costs of providing water to communities throughout southeast Michigan. Additionally, both cities were further impoverished by the loss of most of the revenue-sharing previously provided by the State, as well as by the loss of federal support that in an earlier period helped pay for many essential services.

To make matters worse, both cities were under control of state appointed emergency financial managers, both of whom put a premium on balancing budgets rather than providing essential services. Flint made what was meant to be a temporary switch to Flint River water without sufficiently taking into account the water-lead chemistry and critical need for anti-corrosion treatment. Unfortunately, this occurred after responsibility for protecting clean drinking water had been removed from the respected DNR and assigned to a DEQ whose culture had been negatively impacted by the chronic complaints of "too many regulations." EPA, whose full role in this is not entirely clear to me, was also being defunded, losing staff and accused of being too aggressive on the regulatory front.

One puzzling, and perhaps encouraging observation, is that the response to Flint's water catastrophe has been broad and intense. National media has continued to cover it as the disaster that it is. On the other hand, a decade ago a similar lead contaminated drinking water situation in Washington, D.C. did not generate the national outrage that we see in response to Flint. Nor did decades of lead poisoning of half a million U.S. children and a substantial number of Canadian children -- from old paint mostly in low cost housing -- prompt Congress to provide anything close to adequate funding to avoid another generation of lead-poisoned children. Even as more people (beyond Flint) have turned to drinking bottled water, the public in the Great Lakes still expects its water to be plentiful, clean, and cheap.

A culture which has been convinced that essential environmental protections are nothing more than unnecessary, burdensome regulations is a culture that will soon find itself without any protections. If we are to restore a

culture where politicians of both parties accept their responsibilities to protect the environment and public health, we are going to have to reject the framing of every debate as one that is about regulating business.

I think we can begin by checking our own language – appropriately referring to environmental and public health protections rather than confining ourselves to a debate on the merits of how many unwelcome business regulations are tolerable. Every time you are about to use the word regulation, see if you can substitute the word protection. I think you'll find that in most instances that switch is an easy and natural one. With a change in language and a reframing of our debates, we will be more likely to have fewer Flints and better outcomes.

I am going to close with a story about my dad. He dropped out of high school by economic necessity and established a small town grocery and butcher shop in the 1930's. I used to go watch him on Tuesdays at the local auction where farmers would bring their steers. He would buy a few head and haul them in his truck to the slaughter house behind his store. It was a small operation. By the late 1950's when I was observing, I noted that on the day they slaughtered there was always an extra guy from the Department of Agriculture. He was assigned to watch my father's operation to ensure it was sanitary and protective of public health. Week after week, month after month, and year after year, my dad groused about the man from the State. Close to the end of his life, I had a conversation with my dad in which I asked whether the man from the State did any good. My dad paused for a long quiet moment, and then he said, "Not at all. Not one damn bit." But then after another pause and with just the hint of a smile he said, "But my competition up the road is no longer putting sawdust in his hotdogs." The lesson was clear. Good guys do not need to be told what to do, but there is always somebody out there from whom we all need the protection that only good enforceable laws can provide.

INDIGENOUS RESPONSES TO CLIMATE CHANGE AND WATER QUALITY CONCERNS IN THE GREAT LAKES

Wenona Singel[1]

As a citizen of the Little Traverse Bay Band of Odawa Indians in Michigan, I have an indigenous perspective on the governments of the Great Lakes. A recent book[2] on climate change in the Great Lakes Region begins with an observation that four critical points must be addressed for effective mitigation and adaptation:

- Downscale our understanding of the effects of climate change to understand the local impacts (bring climate change "home");
- Engage expertise on coupled human and natural systems;
- Deploy expertise on decision making under uncertainty; and
- Link scientific analysis with deliberation.

This is interesting because tribal governments are well equipped to do these four things in ways that others are perhaps not. In terms of understanding the local ramifications of a changing climate, tribes are in a unique position with their capacity to collect detailed data regarding local impacts, as a result perhaps of climate change, within their communities. Furthermore, they have the resources and capacity to engage in a deep collection of data regarding changes in water temperatures, changes in habitats, changes in ice formation, changes in precipitation, etc., and impacts on water resources and the ecosystem.

Tribes also have the capacity to engage expertise on the relationship between human systems and natural systems. This is important because it also raises consciousness to the fact that tribes bring an important insight based on their traditional ecological knowledge. Many tribal members also have deep insight into the relationship between the ecosystem and those species — plants

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[2] T. DIETZ & D. BIDWELL, CLIMATE CHANGE IN THE GREAT LAKES REGION: NAVIGATING AN UNCERTAIN FUTURE (2011).

and animals and fish — that they harvest as part of their treaty rights and the impact that climate change may have on their ability to survive as a culture, as a people and to continue their way of life.

Furthermore, tribal councils typically base decisions on the principle that they need to take into account the impact of today's decisions on next steps and next generations. This is a precautionary principle. Tribes acknowledge that it is important to tread lightly because there is tremendous uncertainty regarding human impacts on the environment. As a result, tribes tend to approach changes to the environment with utmost care.

And then finally, with regard to linking scientific analysis and deliberation, tribes are in a very unique position. Tribal governments and coalitions and intertribal Natural Resource Commissions employ some of the best wildlife and fisheries biologists in the country, if not in the world. Not only are they relying on their cultural teachings, traditional teachings, and traditional ecological knowledge, but they are also working closely with the best biologists and scientists to develop an understanding of climate change's impacts and potential affects in the future and steps we can take to both mitigate and adapt to those changes.

The following is a brief overview of some of the important aspects of tribal governance that many people may not be fully aware of. We have, in the United States, a tremendous number of tribes that are affected by decisions made about the Great Lakes. The U.S. Environmental Protection Agency's Region 5 serves thirty-five federally recognized tribes within the states of Michigan, Minnesota, and Wisconsin.[3]

[3] *Region 5 Tribal Program*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/tribal/region-5-tribal-program (last visited Aug. 1, 2018).

Source: U.S. Environmental Protection Agency [4]

Among those tribes there are many different cultural backgrounds represented. The Anishinaabe includes the Odawa, Ojibwe, and Potawatomi. There are also other Native American nations within Great Lakes states, including the Oneida Nation of Wisconsin, the Menominee Indian Tribe of Wisconsin, and New York has the Haudenosaunee Confederacy (that some people call the Iroquois Confederacy), which is represented by tribes like Hyouka, Seneca, Onondaga, and Tuscarora. It's important to note the large cultural families that these tribes represent because they have their own and unique languages, their own histories and teachings, and their own important traditional ecological knowledge.

Understanding this topic requires taking into account some basics of federal Indian law. Foremost of which is the fact that tribes are sovereigns. Tribes

[4] *Tribal Lands in US EPA Region 5*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/sites/production/files/2015-08/documents/r5-tribal-land-map.pdf (last visited Aug. 1, 2018).

were described once by Justice Marshal in 1831 as domestic dependent nations.[5] More recently, Justice O'Connor referred to tribes as the third sovereign[6], in other words, states and federal government are two separate sovereigns in the United States, and tribes represent the third sovereign. Tribes are also, in a sense, pre-constitutional and extra-constitutional. Their existence predates European occupation of North America and the existence of the United States of America by thousands of years.

Furthermore, tribes were not active parties in framing the U.S. Constitution, and they are not directly covered by the Constitution. The Constitution makes two references to tribes. One refers to Congress's authority to regulate commerce with Indian tribes as well as with the states' subordinations. The other refers to the apportionment of representatives but excluding Indians not taxed, which in a way, represents that fact that tribes are seen as outsiders to this compact that formed the Constitution.

While the Constitution does not directly confine the material that creates an understanding of the nature of tribal sovereignty, much can be learned about tribal sovereignty by looking to the content of Indian treaties. Indian treaties are essentially those constituent documents that have a Constitutional nature. They were documents negotiated by tribes in the United States, in which the parties articulate their relationship with each other. And then furthermore, the Constitution reminds us that treaties are the supreme law of the land and, therefore, conflicting state laws are superseded by treaties and that includes, of course, Indian treaties as well. There is a history of over 400 treaties negotiated by Indian tribes with the United States.

Now many of those 400 treaties were negated by the federal government, but more than 200 remain extant and are binding today. Those treaties often include language in which the United States agreed to offer protection to tribes and where tribes accept that protection. In general terms, this galvanized a federal law doctrine called the Trust Responsibility, which states that the federal government has responsibility to protect Indian tribes.

With respect to regulating affairs, the Supreme Court has interpreted Congress as having authority to exercise what's called plenary in power in Indian

[5] Cherokee Nation v. Georgia, 30 U.S. 1, 2 (1831).
[6] *See* Sandra Day O'Connor, *Lessons from the Third Sovereign: Indian Tribal Courts*, 33 TULSA L. REV. 1 (1997).

affairs.[7] This is so Congress can enact legislation that impacts Indian tribes, and in fact, hundreds of statutes and all of U.S. Code: Title 25[8] relates to Indian tribes. In a Supreme Court case file, Chief Justice Marshal first articulated the principle that the law of Georgia had no application within the reservation of the Cherokee Nation. But it's this general principle that state authority is very limited within Indian country, which includes Indian reservations. In general, there is limited second authority within Indian country. It is worth emphasizing that tribal sovereignty is inherent. It predates the existence of the United States and the power to govern that tribes exercised today is not a grant or a delegation from the federal government, but rather is a power that they have retained and never fully lost.

Also relevant to the laws and policies that govern the Great Lakes are Indian treaty rights. There is a long history of treaty negotiation, and these treaties serve many purposes. Most notably they created reservations and included session of many significant swaths of land. But in addition, in many cases they also provided explicit express protection of tribal rights to hunt, trap, fish, and gather on ceded lands. And so these are, in other words, user rights that exist on the ceded territory. One of the Supreme Court's earliest cases involved tribes in the Northwest where the court recognized that Indian treaty rights allowing tribal members to fish off the reservation were so fundamental to the existence of the tribes that to deny them would be to ignore that the fish were as necessary to the existence of the tribes as the atmosphere.

Tribes, as they hunt, fish, and continue ways of life that are fundamental to their culture and existence in their ceded territories, also acknowledge an implicit servitude on those lands. Treaties have been important in this area. When there is legal ambiguity, several conventions require that that the court endeavors to account for how the tribes understood the treaty and not how the United States interprets it. This is because, in many cases, the treaties were negotiated and drafted by federal Indian agents, not by the Indians themselves. Furthermore, they were negotiated and drafted in English, which was often not the language of the tribal members. As a result, ambiguities are interpreted literally and in favor of the Indians. The courts look to the Indian's interpretation of those treaty rights in order to understand those areas where there is confusion.

[7] *See e.g.*, Lone Wolf v. Hitchcock, 187 U.S. 553 (1903).
[8] 25 U.S.C. §§ 1-5636.

A treaty is not a grant of rights, but rather it's a reservation of all rights that are not explicitly ceded. Treaties throughout the Great Lakes involve off-reservation treaty rights. Historically, tribal members asserted these rights knowing they did not relinquish the right to continue their way of life off-reservation. But then they began to be arrested and to be prosecuted for this. Though these prosecutions resulted in some winning cases and some losing cases for these tribal members, eventually the tribes and the United States worked collectively to bring large scale litigation to affirm the existence of off-reservation treaty rights. And that ultimately resulted in three significant wins affecting the Great Lakes within Michigan, Wisconsin, and Minnesota. Minnesota v. Mille Lacs Band of Chippewa Indians was the most recent case from 1999.[9] The tribes exercised their off-reservation rights to hunt, trap, fish, and gather in areas that are critical to the tribes' continuation of their ways of life.

The states initially asserted, after this important litigation, that they have the right to impose state regulations to conserve off-reservation resources. They were worried that the tribes would exercise their right and deplete the fisheries, for example. But tribes are able to preclude state regulation by regulating the resource themselves, both through tribal law and also through intertribal commissions that established regulations for those resources. Great Lakes tribes look to both the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and the Chippewa Ottawa Resource Authority (CORA), which are intertribal coalitions that form commissions that collectively regulate tribal off-reservation treaty rights for tribes.

Treaties are one aspect in which tribes exercise governance and in which they have held an interest in protecting the quality of the Great Lakes. But in addition, tribes have other ways in exercising self-governance. One is under the Clean Water Act,[10] where tribes have the power to exercise what is called "treatment in a state authority." There are many tribes within the Great Lakes basin that exercise this authority and that even includes, for some tribes, waters of the basin's systems, such as the St. Regis Mohawk Tribe. It is interesting to look at how the tribes articulate their intended purpose when promulgating water quality standards under the Clean Water Act because often it's quite distinctive from the purposes that a non-native government would assert when establishing these standards.

[9] Minnesota v. Mille Lacs Band of Chippewa Indians, 526 U.S. 172 (1999).
[10] Clean Water Act, 33 U.S.C. §§ 1251-1388.

The St. Regis Mohawk refer to using the water for traditional, cultural, and ceremonial purposes and that informs the water quality standards that they then articulate. The Bad River Band refer to their original Anishinaabe teachings; the Anishinaabe word for water is "*nibi*" and it is a sacred living part of Earth. As such, that water is essentially a sacred resource that is critical to the culture and way of life of the Anishinaabe people and critical to *manoomin* (wild rice), *name* (Lake Sturgeon), and *ogaa* (walleye). The Grand Portage Band also has water quality standards under the Clean Water Act, but it is also involved in monitoring and collecting data related to the nutrient levels of the water in the reservation and at Grand Portage National Monument. The tribe is involved both in measuring and understanding the relationship between nutrient levels and climate change. The reseeding of *manoomin* on reservations in Northern Michigan is an example of the work tribes are involved in as they endeavor to protect the environment and honor water resources as essential for life. It is our utmost responsibility to care for water resources.

There has been a national effort by the 567 tribal governments in the United States that recently articulated tribal climate principles.[11] These are principles that tribes would like the federal agencies to respect in their interactions to promote and allow tribes to make decisions which help tribal members and communities mitigate and adapt to climate change. Additionally, tribes individually undertake specific efforts to study climate change, as do organizations like GLIFWC. GLIFWC exclusively recognizes that climate change can affect those resources which are harvested as part of tribal treaty rights, and as a result, GLIFWC is at the forefront of understanding how climate change affects for example, fish diets, as well as understanding what kind of species are likely to be more vulnerable as a result of climate change.

[11] B. GRUENIG, K. LYNN, G. VOGGESSER, AND K. POWYS WHYTE, TRIBAL CLIMATE CHANGE PROJECT: UNIVERSITY OF OREGON, TRIBAL CLIMATE CHANGE PRINCIPLES: RESPONDING TO FEDERAL POLICIES AND ACTIONS TO ADDRESS CLIMATE CHANGE (2015), https://tribalclimate.uoregon.edu/files/2010/11/Tribal-Climate-Change-Principles_2015-148jghk.pdf (last visited Aug. 1, 2018).

BALLAST WATER REGULATION IN THE NORTH AMERICAN GREAT LAKES: A COMPLEX REGULATORY ENVIRONMENT AND THE GREAT LAKES BALLAST WATER COLLABORATIVE

Adam Reinhardt[1]

I. INTRODUCTION

Complex environmental issues have become a fixture in the courtrooms of America. With naturally competing interests and ever evolving scientific methods and technology, arbitrating meaningful environmental regulation has become quite daunting. Regulating ballast water discharge in the Great Lakes is complex, with numerous regulators and stakeholders involved. The Great Lakes Ballast Water Collaborative (GLBWC) was created in 2009 in response to the complex nature of ballast water regulation. The GLBWC successfully created a binational forum representing a cross-section of state and federal governments, industry, and academia to share information and understanding in order to speed the pace of policy development. Dealing with a layered and complex web of ballast water regulation, the GLBWC's focus on the frustrations and concerns of ship owners and the constraints of science and technology allowed for new insights and constructive conversation.[2] The format facilitated by the GLBWC represents a model for helping to reduce unnecessary and costly litigation and advance the process of enacting regulation crucial to protecting the environment and economy.

This article first provides an overview of ballast water and aquatic invasive species. This overview includes a discussion of the importance of ballast water to the safe operation of cargo vessels, associated environmental effects of discharging ballast water, and treatment options for ballast water. Next, the article gives an overview of the various regulators with authority over ballast discharge. The article concludes with a discussion of how the GLBWC allowed for new insights and constructive conversation on ballast water regulation by focusing on

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[2] Interview with Dale Bergeron, Maritime Extension Educator, Minnesota Sea Grant (Jan. 2016) [hereinafter Bergeron Interview]; Interview with Sharon Moen, Author of The Great Lakes Ballast Water Collaborative Reports, Communications Coordinator, Minnesota Sea Grant (March 2016) [hereinafter Moen Interview].

ship owners's frustrations while maintaining a firm anchor in the constraints of science and technology.

II. BALLAST WATER AND AQUATIC INVASIVE SPECIES

Ballast water, the water that stabilizes empty and partially full ships in transit,[3] is a known vector for the spread of aquatic invasive species (AIS) to the Laurentian Great Lakes.[4] Organisms brought along with ocean or lake water pumped into the ballast tanks can survive a voyage from one port to another where that water may be discharged, turning once native organisms in one body of water into AIS in another.[5] Once established, AIS can create a host of problems for local species, recreation, and infrastructure. According to the National Wildlife Federation, fifty-five of the eighty-five AIS introduced into the Great Lakes since the opening of St. Lawrence Seaway have been linked to ballast water discharges.[6]

Safe operation of most cargo ships requires taking on and discharging ballast water to stabilize the vessel.[7] Water is taken into ballast tanks located inside the hull of vessels from ports and transported with the vessel to the destination port where this water may be discharged or exchanged (see figure I).[8]

[3] L. David Smith, *Ballast Water Release*, MIT SEA GRANT COASTAL RESOURCES, http://massbay.mit.edu/exoticspecies/ballast/ (last visited Aug. 7, 2018).
[4] *Permit Modification Fact Sheet*, WIS. DEP'T OF NATURAL RES., http://dnr.wi.gov/topic/wastewater/documents/63835_modFS.pdf (last visited Aug. 7, 2018).
[5] *Ballast Water Management*, INT'L MAR. ORG., http://www.imo.org/en/OurWork/Environment/BallastWaterManagement/Pages/Default.aspx (last visited Aug. 7, 2018).
[6] *Stopping Ballast Water*, NAT'L WILDLIFE FED'N, https://www.nwf.org/Our-Work/Environmental-Threats/Invasive-Species/Ballast-Water (last visited Aug. 7, 2018).
[7] *Ballast Water Management*, *supra* note 5.
[8] Smith, *supra* note 3.

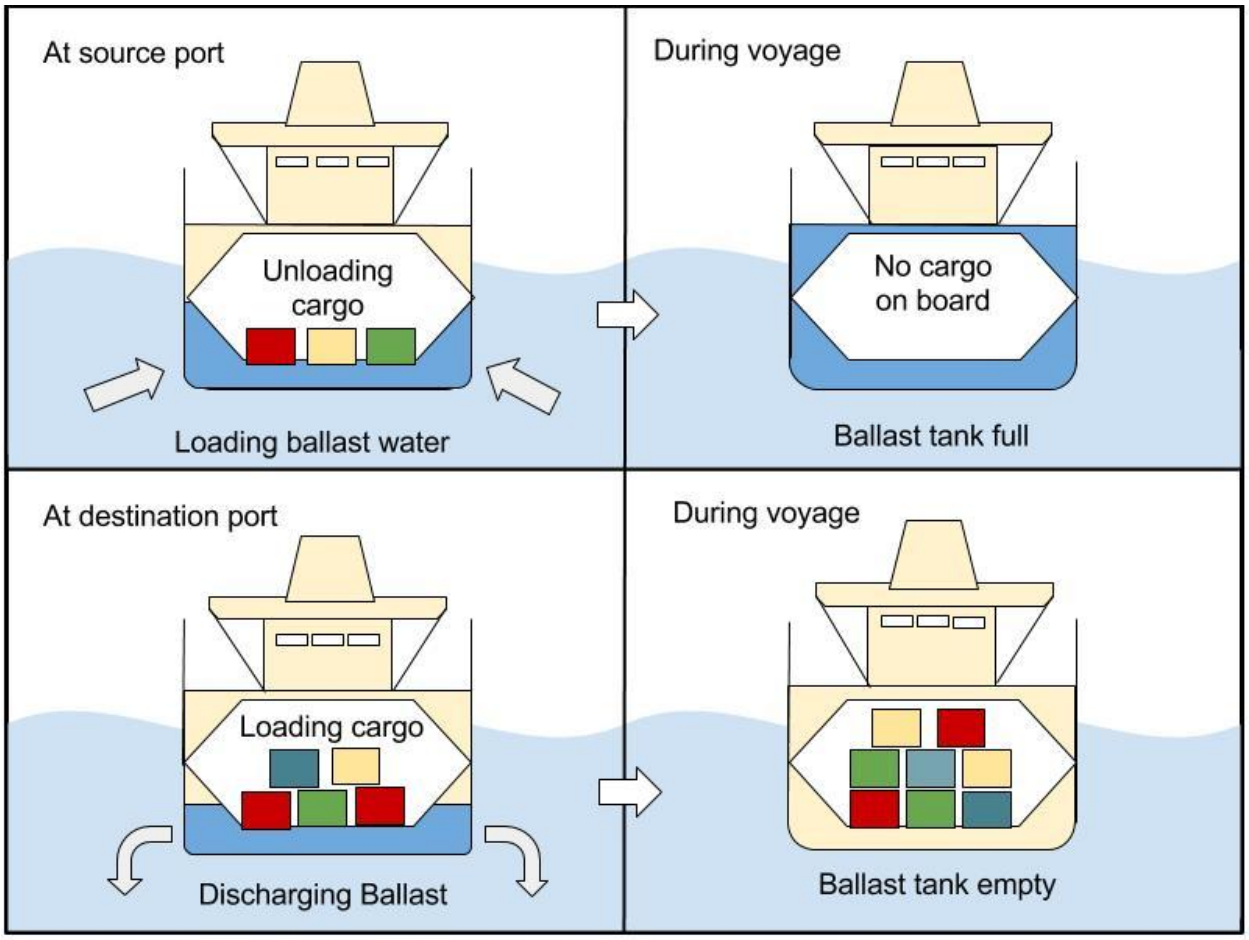

Figure I: Illustration of ballasting and de-ballasting a cargo ship.[9]

Due to the large volume of water that a ship takes on during ballasting, living organisms are frequently pumped into the ship along with the water.[10] Some of these living organisms have survived transoceanic journeys to become AIS in ecosystems where they are not native. The introduction of AIS into an ecosystem presents both environmental and economic problems. Management of AIS is prudent and necessary, as AIS can damage populations of native species

[9] Diagram created by the author with information from www.springer.com/cda/content/document/cda.../9789401793667-c2.pdf?SGWID and http://www.hendersongroup.org/ballast-water-hulls-and-anchors-what-lives-on-it/ (both last visited Aug. 7, 2018).
[10] *Ballast Water Management*, *supra* note 5.

and local economies. Perhaps the most well-known example of an AIS being introduced into the Great Lakes via ballast discharge is the zebra mussel, introduced by a transatlantic cargo ship in the late 1980's.The zebra mussel, *Dreissena polymorpha*, clogs water intake pipes in power plants, obstructs irrigation and drainage pipes, reduces native species populations, and creates a host of negative effects for recreational activities.[11] The cost of damage to water filtration, water intake pipes, and electric generation plants alone are significant, with estimates in the billions of dollars.[12] Due to these concerns, various governing entities have introduced regulations for the control of ballast discharge.[13]

Concerns over AIS introduction through ship ballast led to the use of mid-ocean ballast exchange, formally mentioned in the American Bureau of Shipping's 1999 Advisory Notes on Ballast Water Exchange Procedures.[14] This process involves taking in ballast water at the previous port and discharging and exchanging the ballast water in the ocean at least 200 nautical miles offshore.[15] Referred to as an "intermediate solution" in the 2004 International Convention on Ballast Water Management,[16] mid-ocean exchange has serious drawbacks. For example, the layout of most cargo ship ballast tanks permit sediment to accumulate in certain parts of the tank, allowing dormant organisms within the sediment to potentially survive the voyage despite the mid-ocean ballast exchange. Furthermore, the safe operation of the vessel remains its top priority.

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[11] *Zebra Mussel Fact Sheet*, INVASIVE SPECIES PROGRAM, MINN. DEP'T OF NATURAL RES., http://files.dnr.state.mn.us/natural_resources/invasives/aquaticanimals/zebramussel/fact_sheet-zebra_mussels.pdf (last visited Aug. 7, 2018).

[12] *Case Study: Zebra Mussels*, U.S. DEP'T OF STATE, https://2001-2009.state.gov/g/oes/ocns/inv/cs/2304.htm (last visited Aug. 7, 2018).

[13] *Ballast Water Management*, *supra* note 5.

[14] AM. BUREAU OF SHIPPING, ADVISORY NOTES ON BALLAST WATER EXCHANGE PROCEDURES (1999), *available at* http://ww2.eagle.org/content/dam/eagle/rules-and-guides/current/other/18_ballastwaterexchangeprocedures/pub18_ballastwater_op.pdf (last visited Aug. 7, 2018).

[15] AM. BUREAU OF SHIPPING, GUIDE FOR BALLAST WATER EXCHANGE, (2010), *available at* https://www.energysupplychain.com/technical_library/ABS-G-Gidue%20for%20Ballast%20Water%20Exchange-Oct-2010.pdf (last visited Aug. 7, 2018).

[16] *International Convention for the Control and Management of Ships' Ballast Water and Sediments*, INT'L MAR. ORG, http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships%27-Ballast-Water-and-Sediments-(BWM).aspx [hereinafter *IMO Convention*].

Therefore, inclement weather may prevent a ship from being able to discharge its ballast at sea.[17]

Due to these drawbacks, the the IMO, U.S. Coast Guard (USCG), U.S. Environmental Protection Agency (EPA), as well as several state-level regulatory bodies have all deemed a dedicated ballast water treatment system (BWTS) as necessary. BWTSs use several different methods to reduce the number of living species in ballast tanks below regulatory limits, from UV and filtration to biocides and chemicals.[18] Various BWTSs have been developed. However, these systems must receive USCG approval before being considered for inclusion in U.S. regulations.[19]

With more than 110 active ports spanning eight U.S. states and two Canadian provinces moving over 160 million metric tons of cargo a year in the Great Lakes region,[20] the importance of managing ballast water cannot be understated. The patchwork of regulations and emerging ballast control technologies developed over the past few decades - in conjunction with a growing understanding of the impact of AIS - have precipitated numerous lawsuits in the United States, considerably slowing the process of addressing the impact of ballast waters on the environment.[21] Further, shipping traffic may increase in the future. The USCG determined that the opening a third lock in the Panama Canal, which occurred in 2016,[22] could substantially increase Great Lakes shipping traffic, making ballast water management all the more important.[23]

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[17] COMM. ON SHIPS' BALLAST OPERATIONS, NAT'L RESEARCH COUNCIL, STEMMING THE TIDE: CONTROLLING INTRODUCTIONS OF NONINDIGENOUS SPECIES BY SHIPS' BALLAST WATER 36 (1996), available at http://www.nap.edu/read/5294/chapter/5#36 (last visited Aug. 8, 2018).
[18] Corrina Chase, et al., *Marine Bioinvasions Fact Sheet*, MIT SEA GRANT, http://massbay.mit.edu/resources/pdf/ballast-treat.pdf (last visited Aug. 8, 2018).
[19] *Ballast Water Management (BWM) Extension Program Update*, U.S. COAST GUARD, http://american-club.com/files/files/MA_031317_USCG_Ballast_Water_Management_Program_Compliance_Update_p2.pdf (last visited Aug. 8, 2018).
[20] SAINT LAWRENCE SEAWAY DEV. CORP., ANNUAL CORPORATE SUMMARY 2014-2015 (2015), *available at* http://www.greatlakes-seaway.com/en/pdf/slsmc_ar2015_en.pdf (last visited Aug. 8, 2018).
[21] Bergeron Interview, *supra* note 2.
[22] *The Expanded Canal*, CANAL DE PANAMÁ, https://micanaldepanama.com/expansion/ (last visited Aug. 8, 2018).
[23] Moen Interview, *supra* note 2.

III. MULTI-LAYERED REGULATORY OVERSIGHT OF BALLAST WATER MANAGEMENT IN THE GREAT LAKES BASIN

The fundamental issue surrounding ballast water regulation is the multifaceted and often conflicting regulatory mandates established by several governing entities. Consequently, ship owners must navigate a complex network of regulations. This section examines the regulators of ballast water in the Great Lakes region and how their authority overlaps.

A. IMO Regulation

To address the concerns surrounding untreated ballast, the United Nations tasked the International Maritime Organization (IMO) with establishing international standards for the prevention of marine pollution in 1992.[24] In 2004, the International Convention for the Control and Management of Ships Ballast Water & Sediments (Convention) was presented at the Diplomatic Conference in London.[25] The Convention established the IMO D2 standards for ballast water exchange: 95% volumetric exchange of ballast; a discharge with less than ten viable organisms per cubic meter greater than or equal to 50 micrometers in minimum dimension; and less than ten viable organisms per milliliter between 50 micrometers and 10 micrometers in minimum dimension.[26] These standards for ballast water purity were later adopted by the United States in the 2012 USCG Discharge Standard Final Rule and EPA Vessel General Permit 2 (VGP2).[27] Finally, in sections G8, G9, and G10 of the Convention, a comprehensive guideline for IMO ballast water management system type-approval was laid out.[28]

For ratification, at least thirty states representing 35% of the world tonnage of cargo needed to sign the Convention, which went into effect on September 8, 2017.[29] As of August 2018, the Convention had 75 contracting

[24] *IMO Convention*, *supra* note 16.
[25] *Id.*
[26] *Id.*
[27] U.S. ENVTL. PROT. AGENCY, VESSEL GENERAL PERMIT FOR DISCHARGES INCIDENTAL TO THE NORMAL OPERATION OF VESSELS (VGP) (2013), *available at* https://www3.epa.gov/npdes/pubs/vgp_permit2013.pdf [hereinafter VGP2] (last visited Aug. 8, 2018).
[28] *Id.*
[29] *IMO Convention*, *supra* note 16.

states, representing 75.34% of world tonnage.[30] Canada signed on in April of 2010; the United States, however, has not ratified the Convention.[31]

B. U.S. Environmental Protection Agency Regulation

In the late 1990s, environmental groups filed a petition demanding the EPA repeal its long-standing exemption of ballast water from the National Pollutant Discharge Elimination System (NPDES) permit program under Section 402 of the Clean Water Act (CWA).[32] The EPA rejected this request on the grounds of the exceptions' long-standing existence.[33] The EPA's decision was challenged in federal court in 2006, resulting in the court requiring EPA to include ballast water in the NPDES permitting system.[34] However, regulation of ballast water was not an area of expertise for the EPA, thus requiring collaboration with the other federal agency overseeing ballast water in the United States: the USCG. The EPA issued a general permit in 2008 (VGP1) outlining best practice standards for ballast discharge.[35] However, the EPA would not establish numerical limits for ballast water until the updated 2013 Vessel General Permit (VGP2).[36] The VGP2, justified by technology-based effluent limits, adopts discharge standards equivalent to the IMO D2 and does not include ships that operate exclusively within the Great Lakes and were built pre-2009.[37] VGP2 compliance is determined by self-monitoring,[38] a distinction from the compliance exams and inspections performed by the USCG pursuant to its ballast water regulatory regime discussed below.

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[30] INT'L MAR. ORG., STATUS OF IMO TREATIES 515-16 (2018), available at http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/Status%20-%202018.pdf (last visited Aug. 8, 2018).
[31] *Id.*
[32] Pac. Envtl. Advocacy Ctr., Petition for Repeal of 40 CFR § 122.3(a) (Jan. 1999), *available at* https://www.epa.gov/sites/production/files/2015-09/documents/2007_07_02_invasive_species_ball_water_pet-2.pdf (last visited Aug. 8, 2018).
[33] Pacific Environmental Advocacy Center, EPA No. 03-5760 (Sept. 2, 2003), https://www3.epa.gov/npdes/pubs/ballast_report_petition_response.pdf (last visited Aug. 8, 2018).
[34] Northwest Environmental Advocates v. EPA, No. C 03-05760 SI, 2006 WL 2669402 (N.D. Cal. 2006), *aff'd*, 537 F.3d 1006 (9th Cir. 2008).
[35] U.S. ENVTL. PROT. AGENCY, VESSEL GENERAL PERMIT FOR DISCHARGES INCIDENTAL TO THE NORMAL OPERATION OF VESSELS (VGP) (2008), *available at* https://www.epa.gov/npdes/vessels-additional-resources (last visited Aug. 8, 2018).
[36] U.S. ENVTL. PROT. AGENCY, FINAL 2013 VGP FACT SHEET (2013), *available at* https://www3.epa.gov/npdes/pubs/vgp_fact_sheet2013.pdf (last visited Aug. 8, 2018).
[37] *Id.*
[38] *Id.*

In August 2014, the Natural Resources Defense Council sued the EPA over the VGP2's leniency and technology-based effluent limits.[39] Ultimately, on October 5, 2015 the United States Court of Appeals for the Second Circuit decided, unanimously, that the EPA acted "arbitrarily and capriciously" in issuing the standards included in the VGP2, and required the EPA to redraft the VGP2[40] While EPA revises the VGP2—a process that will likely take several years—the existing permit standards remain in effect.

C. U.S. Coast Guard Regulation

In many ways, the USCG is set up to address ballast water regulation.[41] The very nature and structure of the Coast Guard coincides well with the requirements of ensuring the proper treatment of ballast.[42] In 2012, the USCG promulgated Standards for Living Organisms in Ships' Ballast Water Discharge in U.S. waters. The standards established discharge standards for both U.S. and non-U.S. ships operating within U.S. waters in line with the IMO Convention.[43] The USCG standards include requirements for ballast water management, record keeping, and recording.[44] Under these rules, the USCG conducts domestic vessel inspections and control exams to determine compliance.[45] In addition, the standards established a unique type-approval process to determine the effectiveness of BWTSs.[46]

There are two methods for receiving type approval from the USCG:

- The vendor of the BWTS can show evidence, in the form of testing results and data, from a previous type approval performed by a foreign administration.[47] The vendor must also show the BWTS performs to USCG standards and is able to pass additional testing.[48]

[39] Natural Res. Def. Council v. U.S. Envtl. Prot. Agency, 808 F.3d 556 (2nd Cir. 2015).
[40] *Id.*
[41] Interview with Craig Middlebrook, Deputy Administrator of the St. Lawrence Seaway Development Corp (Feb. 2016) [hereinafter Middlebrook Interview].
[42] *Id.*
[43] Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters, 77 Fed. Reg. 17253 (March 23, 2012), *available at* https://www.gpo.gov/fdsys/pkg/FR-2012-03-23/pdf/2012-6579.pdf (last visited Aug. 8, 2018).
[44] *Id.*
[45] *Id.*
[46] *Id.*
[47] *Id.*
[48] *Id.*

- A BTWS can also receive type approval by through land-based, onboard, and component testing by an Independent Laboratory (IL). As of December 2015, five laboratories achieved IL status.[49] These labs are certified to perform the tests required to determine if a BTWS meets USCG standards.[50]

D. Canadian Regulation

Because of a shared water boundary, the regulation of ballast in the Great Lakes entails the oversight of the governments of both Canada and the United States. As of April 2010, Canada is a signed member of the Convention.[51] Canada has also established its own ballast water guidelines under the authority of Transport Canada and published by the Department of Transport Infrastructure and Communities.[52]

E. U.S. State Regulation

Various U.S. states have established their own standards for ballast water discharge, either through a 401 certificate filed in conjunction with EPA VGP2, or through their own permitting program.[53] For instance, the California Coastal Ecosystems Protection Act, adopted in 2006, set discharge standards 1000 times more stringent than the standards put forth by the IMO.[54] In regards to shipping in the Great Lakes, Wisconsin proposed ballast water permit standards 100 times that of the IMO, but the standards were not enacted due to a lack of feasibility.[55]

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[49] *Id.*
[50] *Id.*
[51] *IMO Convention*, *supra* note 16.
[52] Section 657.1 of the 2001 Canada Shipping Act, in 2006, TP 13617, entitled A Guide to Canada's Ballast Water Control and Management Regulations, established regulations on ballast water for all ships operating within the transnational waters of the Great Lakes Basin; entailing similar requirements and standards to the IMO BWM Convention, like requiring the exchange of ballast 200 nm offshore. *See* TRANSPORT CANADA, A GUIDE TO CANADA'S BALLAST WATER CONTROL AND MANAGEMENT REGULATIONS (2006), *available at* https://www.tc.gc.ca/eng/marinesafety/tp-tp13617-menu-2138.htm (last visited Aug. 8, 2018).
[53] MINN. POLLUTION CONTROL AGENCY, FED. CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION OF U.S. ENVTL. PROT. AGENCY VESSEL AND SMALL VESSEL GEN. PERMIT (2012), *available at* https://www.pca.state.mn.us/sites/default/files/bdpacket-201208-vessel.pdf (last visited Aug. 22, 208).
[54] Middlebrook Interview, *supra* note 43.
[55] *Id.*

Inconsistencies in regulations present a challenge to shippers, who may encounter several different state regulations during a voyage through the Great Lakes Basin.

Figure IV: A map depicting how U.S. states are currently regulating ballast in the Great Lakes region. [map courtesy of Minnesota Sea Grant]

The process of regulating ballast embodies the very nature of complex environmental regulation. A large network of sovereign entities, all of whom have their own processes and unique structures, creates a challenging arena to create uniform and effective regulation to prevent the spread of AIS through ship ballast.[56] Furthering this challenge was a general lack of communication between these entities.[57] This lack of communication led to conflicting guidelines and water purity requirements, a challenge to shippers who often pass through several state lines and international borders during a single trip through the Great Lakes.[58] Because of this, implementing meaningful regulation was chronically delayed.[59]

It should be noted that while all actors were working towards the same goal of a lake system protected from AIS, building communication and understanding between these actors required a new and spirited approach.[60]

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[56] *Id.*
[57] Bergeron Interview, *supra* note 2.
[58] *Id.*
[59] Middlebrook Interview, *supra* note 43.
[60] *Id.*

IV. THE GREAT LAKES BALLAST WATER COLLABORATIVE

To address some of the confusion and concern surrounding the developing regulation of ballast water, 2009 saw the creation of a collaborative effort to bring together a cross-section of regulators and entities impacted by ballast water and its subsequent regulation.[61] This effort would become known as The Great Lakes Ballast Water Collaborative (GLBWC), and would meet seven times between 2009-2014. Included in these conferences were members of the EPA, USCG, state, local, and foreign government representatives, ship owners, vendors, scientists, and academics.[62] Cognizant of the limits of science and technology and a respect for the timelines and processes of regulatory bodies, these often competing interests came together in an informal manner to discuss practical ways to address many of the issues surrounding ballast water regulation.[63] At its most simple level, the GLBWC is an effort to expedite the regulation of ballast by fostering better communication among stakeholders and sharing relevant and accurate information on the issue of ballast water regulation.[64] In the words of Deputy Administrator of the Saint Lawrence Seaway Development Corporation Craig Middlebrook: "We're not here to debate; we're here to talk about what is practical; what is doable."[65]

A. 2009-2010

On September 24, 2009, the Saint Lawrence Seaway Development Corporation partnered with the International Joint Commission (IJC) to host a collaborative, binational conference on ballast water regulation in the Great Lakes. The GLBWC was facilitated by Minnesota Sea Grant and the Great Lakes Commission and attended by a broad spectrum of stakeholders.[66] The goal of the conference was to pull back some of the confusion and concern surrounding an

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[61] Bergeron Interview, *supra* note 2; Moen Interview, *supra* note 2.
[62] SHARON MOEN, REPORT FROM THE GREAT LAKES BALLAST WATER COLLABORATIVE MEETING (2010), *available at* http://www.greatlakes-seaway.com/en/pdf/Ballast_Water_Collaborative_Meeting_Report_05-18-10.pdf (last visited Aug. 22, 2018).
[63] Interview with Mark Burrows, Project Manager at International Joint Commission - Great Lakes Regional Office (Feb. 2016) [hereinafter Burrows Interview].
[64] Middlebrook Interview, *supra* note 43.
[65] *Id.*
[66] *September 24, 2009 Great Lakes Ballast Water Collaborative Meeting in Detroit, Michigan*, GREAT LAKES ST. LAWRENCE SEAWAY SYS., http://www.greatlakes-seaway.com/en/environment/ballast_collaborative0909.html [hereinafter *September 2009 Meeting*] (last visited Aug. 22, 2018).

increasingly complex regulatory environment. The collaborative set out specific topics to be addressed, yet allowed for a free flow of thought that created productive insight on key issues.[67]

The first forum was held in Detroit, Michigan and attended by representatives of state governments (Minnesota, Wisconsin, Ohio, Michigan, New York), Canadian Provincial Representatives (Ontario), federal agencies (USCG, EPA, U.S. National Park Service, National Oceanic and Atmospheric Administration, U.S. Geological Survey, Transport Canada, Fisheries and Oceans Canada), U.S. and Canadian fleets, and many of North America's top ballast water researchers.[68] With a critical mass of stakeholders, the stage was set to improve communication and understanding between a wide range of interests in ballast water policy. The one-day convention, and follow-up calls and meetings later in 2009, focused on introductions, identifying research priorities, and laying out some of the fundamental issues that needed to be addressed in regard to ballast water.[69]

In May of 2010, the GLBWC met again in Montreal, Quebec, where viable treatment systems were discussed and a nearly unanimous understanding of the gap between discharge targets and available technology to achieve those targets was established.[70] In July 2010, the third official meeting of the GLBWC took place in Duluth, Minnesota. During this session a focus was put on the complexities of assuring a BWTS works.[71] Type-approval processes were laid out and commented on, and the timeline (often 18-24 months) to get a BWTS type-approved was discussed.[72]

B. 2011-2012

In January 2011, the GLBWC came together in Toronto, Ontario. At the meeting, Susan Sylvester, a representative of the Wisconsin Department of Natural Resources (WDNR), asked for assistance from the collaborative to

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[67] Burrows Interview, *supra* note 66.
[68] *September 2009 Meeting*, *supra* note 69.
[69] Middlebrook Interview, *supra* note 43.
[70] MOEN, *supra* note 65.
[71] SHARON MOEN, REPORT FROM THE GREAT LAKES BALLAST WATER COLLABORATIVE MEETING: DULUTH (2010), *available at* http://www.greatlakes-seaway.com/en/pdf/Ballast_Collaborative_Report_and_WGReports_Duluth(Final).pdf (last visted Aug. 22, 2018).
[72] *Id.*

determine the feasibility of Wisconsin's desired ballast discharge standard of 100 times IMO Convention standards.[73] The GLBWC enthusiastically took on the topic, providing insight from ballast water researchers, among others, on the feasibility of a 100 times IMO standard.[74] The assistance provided to the WDNR provides an excellent example of how the structure of the GLBWC is a model for helping to mitigate unnecessary litigation. Ultimately, the experts within the GLBWC deemed the standards proposed by the WDNR exceeded the limits of technology.[75]

On September 27, 2011, the GLBWC met in Baltimore, Maryland.[76] During this meeting nearly seventy representatives from the shipping industry, both the U.S. and Canadian governments, and scientists from across the country discussed the movement of ballast water through the Great Lakes and current BWTSs.[77] The challenge of regulating ballast was reinforced in the words of Craig Middlebrook, who stated that "[w]e have a serious challenge on our hands," and "[n]o single entity has all the answers to these questions."[78] Additionally, Middlebrook noted the value of the GLBWC reports and frequency in which they were being cited, which helps frame the value of bringing together competing interests and producing substantive insight.[79]

On August 3-4, 2012, the GLBWC met again in Duluth, Minnesota for what was to become the sixth full-scale conference.[80] This meeting, in essence, continued the discussion goals of the previous meeting in Maryland. Tracking the progression of ballast water regulation, the GLBWC became an extremely valuable resource to all stakeholders within the regulatory environment: a level

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[73] SHARON MOEN, REPORT FROM THE GREAT LAKES BALLAST WATER COLLABORATIVE MEETING: TORONTO (2011), *available at* http://www.greatlakes-seaway.com/en/pdf/Toronto_Ballast_Water_Collaborative_Report(Final).pdf (last visited Aug. 22, 2018).
[74] *Id.*
[75] *Id.*
[76] SHARON MOEN, REPORT FROM THE FIFTH GREAT LAKES BALLAST WATER COLLABORATIVE MEETING: BALTIMORE (2011), *available at* http://www.greatlakes-seaway.com/en/pdf/Baltimore_BWC_Report_092711.pdf (last visited Aug. 22, 2018).
[77] *Id.*
[78] *Id.*
[79] *Id.*
[80] SHARON MOEN, REPORT FROM THE SIXTH GREAT LAKES ST. LAWRENCE SEAWAY BALLAST WATER COLLABORATIVE MEETING DULUTH, MINNESOTA (2012), available at http://www.greatlakes-seaway.com/en/pdf/BWC_Report_080212.pdf (last visited Aug. 22, 2018).

playing field to discuss the latest news in ballast regulation and an informal environment to build a better understand between naturally competing interests.[81]

C. 2014-

The most recent GLBWC meeting occurred March 3-4, 2014 in Silver Spring, Maryland. During this meeting a focus was placed on discussing the USCG's type-approval process, the EPA's VGP process, Canada's current regulatory environment, specifically regarding the IMO Convention, and the technological progress of BWTSs.[82] Craig Middlebrook also presented a collaborative model laying out what is essential to successfully sharing information in an ever-evolving regulatory environment.[83] This model included: building and strengthening partnership between stakeholders, a forum for unbiased discussion, flexibility and informality, and a heavy emphasis on inclusive participation.[84] Middlebrook laid out how the GLBWC was, and still is, a model for addressing complex environmental issues. This model represents the best practice for advancing regulation and avoiding unnecessary litigation. The need for the GLBWC still exists, and the collaborative could potentially meet in the future.[85]

The GLBWC became an important component of the regulatory process by helping to diffuse the, at times, contentious environment that had developed over regulating ballast water entering the Great Lakes Basin. A thoughtfully laid out and executed meeting of stakeholders allowed for real and substantive conversation on how to address the complex issue of regulating ballast discharge.[86] By providing a forum for an objective conversation anchored in the constraints of science and technology, with an element of informality, and attention to letting all parties participate, the GLBWC became an important tool in the regulatory process.[87] Having the most current information on ballast water, the GLBWC became an important reference tool for regulators at every level.[88]

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[81] Middlebrook Interview, *supra* note 43.
[82] GREAT LAKES ST. LAWRENCE SEAWAY SYS., FINAL REPORT FROM THE 7TH GREAT LAKES BALLAST WATER COLLABORATIVE MEETING: SILVER SPRING, MARYLAND (2014), *available at* http://www.greatlakes-seaway.com/en/pdf/March_3-4_2014_Great_Lakes_Ballast_Water_030314.pdf (last visited Aug. 22, 2018).
[83] *Id.*
[84] *Id.*
[85] Middlebrook Interview, *supra* note 43.
[86] *Id.*
[87] Bergeron Interview, *supra* note 2.
[88] Middlebrook Interview, *supra* note 43.

The concise and understandable reports provided an important point of reference, and by leveling the informational playing field, allowed for better understanding between parties.[89]

Additionally, in the opinions of Mark Burrows of the IJC and Craig Middlebrook of the Saint Lawrence Seaway Development Corporation, the collaborative also opened lines of communication that otherwise would not exist.[90] This communication helped build an understanding between stakeholders, a factor that cannot be understated in the globalized regulatory climate we live in today.

V. CONCLUSION

AIS do not recognize the boundary lines of countries, requiring, in the case of the Great Lakes Basin, a multinational, and multidisciplinary understanding for managing and regulating ballast water. With so many players in the game, establishing regulations takes time and determination, often resulting in numerous costly and time consuming lawsuits, as in the case of ballast water regulation. With a lawsuit against the EPA requiring that ballast be included under the CWA, and standards from the USCG, U.S. states, Canada, and the IMO, a web of regulators became responsible for ballast discharge.[91] What became clear is that providing explicit and consistent standards are a crucial, yet difficult, step for implementing treatment systems for ballast water. Ship owners simply cannot install treatment systems until they are assured those systems will operate at levels consistent with the standards of every entity with regulatory authority in waters they travel. An initial lack of sufficient communication between these regulators only furthered the issue.[92] Additionally, the timelines involved with setting, establishing, and implementing treatment of ballast proved to be an important, if at times frustrating, element of regulation, and the GLBWC helped build an understanding of that reality between stakeholders.[93] Ultimately progress has been made. The USCG has a type-approval process established[94], discharge standards from states are becoming more consistent under the 401 certificate of EPA VGP2,[95] and communication between regulators has increased.[96]

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[89] *Id.*
[90] *Id.*; Burrows Interview, *supra* note 66.
[91] *See* U.S. ENVTL. PROT. AGENCY, *supra* note 38.
[92] Middlebrook Interview, *supra* note 43.
[93] Bergeron Interview, *supra* note 2.
[94] *Ballast Water Management (BWM) Extension Program Update*, *supra* note 19.
[95] *See* U.S. ENVTL. PROT. AGENCY, *supra* note 38.

In a more general sense, many of the traditional methods for implementing regulation may not be sufficient in today's globalized environment. The GLBWC was certainly not the first effort to bring together stakeholders from various governing entities, but it provides a case study of how by bringing together stakeholders on a regulatory issue, and allowing everyone a voice to be heard, tangible progress can be made and a better understanding between those involved can be achieved.

[96] Middlebrook Interview, *supra* note 43.